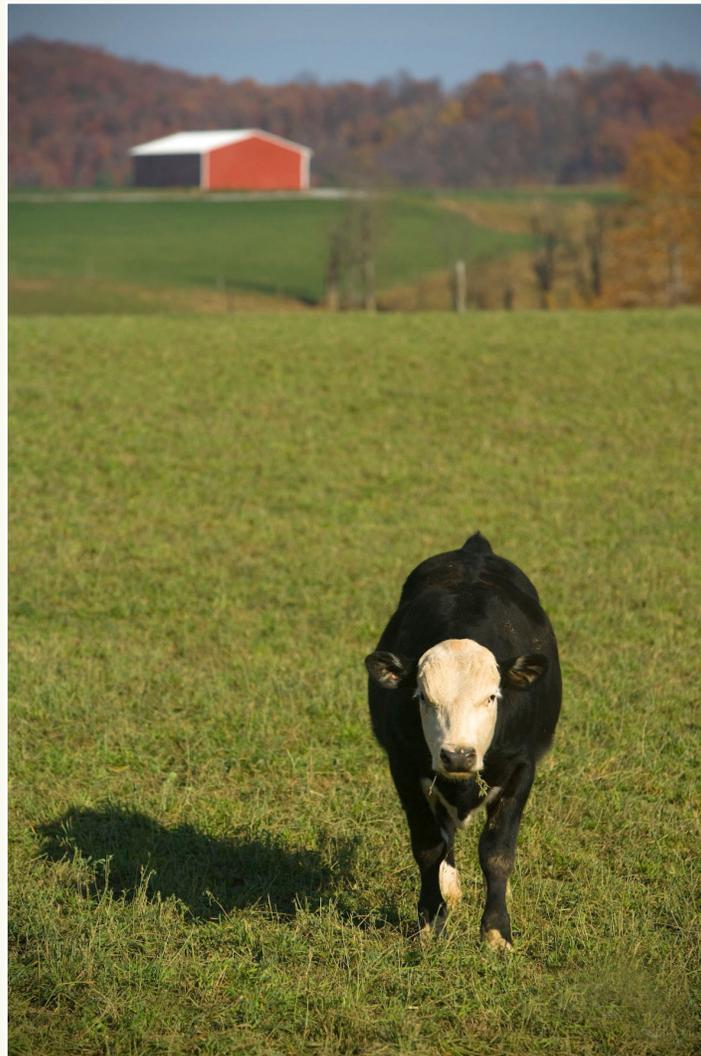


An Evaluation of Agricultural Development Board Investments in Kentucky Agriculture 2001-2007:

Non-Model Projects, Model Programs, and the Kentucky Agricultural Finance Corporation



PREPARED BY:

Dr. Craig Infanger, Dr. Richard Maurer, and Dr. Gary Palmer

University of Kentucky
October 2008

Forward

In April, 2007, the Agricultural Development Board contracted with the University of Kentucky to evaluate the effectiveness of the Non-Model Investments in agriculture, agribusiness, and leadership development over the period of 2001-2006 by systematically examining outcomes and impacts of funded activities. In January, 2008, the new Executive Director of the Governor's Office on Agricultural Policy requested that UK expand the evaluation to include the County Model Program Investments and the Kentucky Agricultural Finance Corporation. The evaluation reported in this document was completed by the following UK Team members:

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This study funded by the Kentucky Agricultural Development Board

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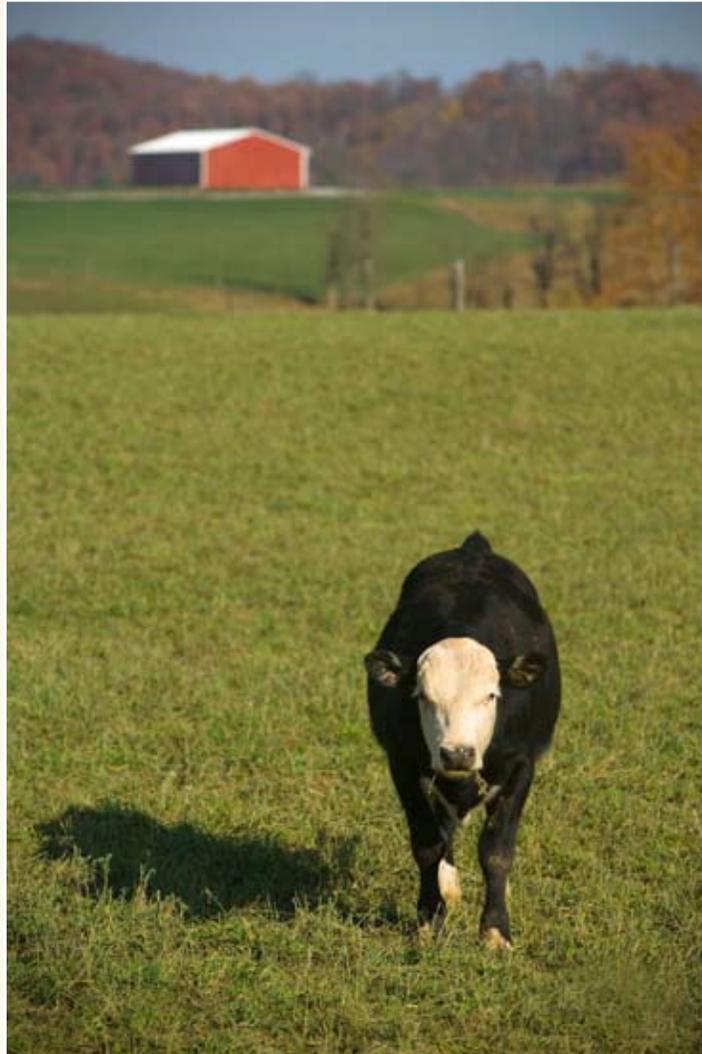
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EXECUTIVE SUMMARY



PREPARED BY:

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University of Kentucky
October 2008

An Evaluation of ADB Investments in Kentucky Agriculture 2001-2007



A total of \$209 million was invested in programs and projects during the study period.

In 2000, the Kentucky General Assembly passed House Bill 611, establishing how Kentucky's Master Settlement Agreement funds would be allocated. Fifty percent of the funds were designated for agriculture. The Kentucky Agricultural Development Board (ADB) was established to distribute these funds, and the Governor's Office of Agricultural Policy (GOAP) was created to provide the administrative duties. Sixty-five percent of the funds were allocated for statewide projects and 35 percent for counties under the oversight of County Agricultural Development Councils.

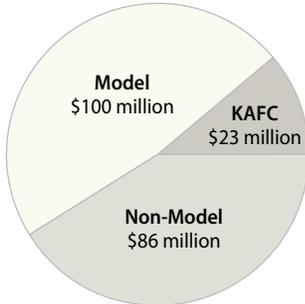
In 2007, the ADB and the GOAP contracted with the University of Kentucky to conduct a study to evaluate the impacts of the Agricultural Development Fund (ADF) expenditures on state non-model projects. Later in the project, the evaluation study was broadened to coordinate with the study of expenditures for county model programs and to include the Kentucky Agricultural Finance Corporation (KAFC).

Evaluation Format

This evaluation was based on the Board's overall investment philosophy:

The Board will invest these funds in innovative proposals that increase net farm income and affect tobacco farmers, tobacco-impacted communities, and agriculture across the state by stimulating markets for Kentucky agricultural products, finding new ways to add value to Kentucky agricultural products, and exploring new opportunities for Kentucky farms and farm products.

Figure 1. ADB Expenditures, 2001-06.

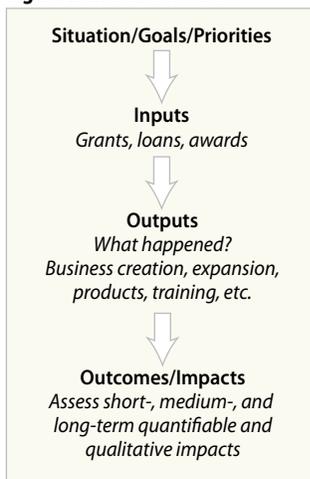


The evaluation results are presented in three parts: Part I addresses the impacts of non-model projects, which are projects that were individually funded by the Kentucky Agricultural Development Board. Part II examines the county model programs, which are standardized programs administered through counties, primarily with county funding. Part III looks at the Kentucky Agricultural Finance Corporation, the entity that gives agricultural loans to producers. For each part, important findings are presented along with overall conclusions from the study results.

Funding

A total of \$209 million was invested in programs and projects by the ADB during the study period. The distribution of these funds across the types of programs is presented in Figure 1.

Figure 2. Evaluation Model.



Evaluation Methodology

The overall goal of this evaluation is to assess the effectiveness of the ADB investments in agriculture, agribusiness, and leadership development for those funds awarded from 2001 to 2006. Figure 2 depicts the model that was developed to guide the evaluation project.

To evaluate the non-model projects, the UK Evaluation Team visited and interviewed recipients of all 64 projects funded at \$100,000 or more and 25 of 111 smaller projects. Model programs were assessed based on reporting data from counties and program participants with additional assessment of impacts by groups of experts (referred to as "expert groups"). The Kentucky Agricultural Finance Corporation loan programs were evaluated through site visits and interviews with a sample of project recipients and participating lenders and assessments of program data. Expert groups of industry and association representatives, producers, and university faculty were utilized to help assess overall impacts in all phases of the evaluation.



The Non-Model Projects

Over the evaluation period, the Agricultural Development Board (ADB) invested \$86 million in non-model projects. Data were collected and site visits and interviews conducted during summer 2007 for all 31 large projects (>\$500,000) and 33 medium-sized projects (\$100,000 to \$499,000), plus a sample (25) of small projects (<\$100,000).

Evaluation Criteria and Approach

The evaluation criteria were focused on attempting to measure the performance of funded projects in contributing to the overall ADB investment philosophy and the priorities for marketing and market development, farm family education, leadership, and research. Detailed questions were included in the questionnaire to assess outcomes and impacts of all projects. The evaluation results and conclusions are based on the data from the GOAP files, site visits and interviews, and analysis by expert groups and outside consultants.

A standardized questionnaire was used to assess progress and identify specific major impacts. Expert groups were invited to review the results of the interviews and assist in the analysis of impacts. The overall impacts of the investments for non-model projects are reported in three ways: 1) specific major impacts on farm income generation, jobs, etc.; 2) performance rankings for large and medium-sized projects; and 3) impacts on key sectors like livestock or horticulture production, marketing, and leadership.

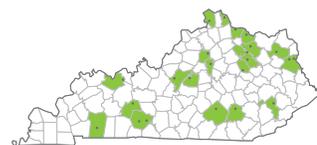
Specific Major Impacts

Since 98 percent of the project recipients indicated they had achieved “all” or “some” of their goals at the site visit, specific questions were asked and information collected on various types of potential impacts:

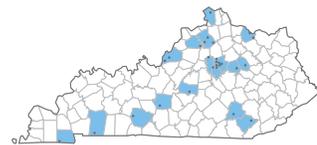
- *New markets or expansion of existing markets*—It is clear that these investments have led to broad market improvements. Over 148 new markets have been created or existing markets expanded, primarily through investments in livestock and horticulture projects plus marketing promotion. Examples of new markets include Siemer Milling purchases of low-quality wheat for industrial

148 new markets have been created or existing markets expanded.

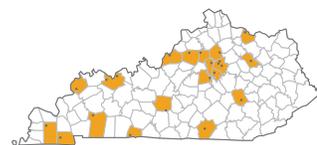
Project Site Visits



Small projects



Medium projects



Large projects



Over 500 new products
have been created in
the last six years.

glue, naturally cured hams and the Process Verified Program (PVP) for cattle, and northern destinations for nursery products. Markets have been expanded for Certified Preconditions for Health (CPH-45) feeder calf sales, apple cider, and “Kentucky Proud” branding.

- *New products*—A large array of over 500 new products has been created by Kentucky agricultural entrepreneurs, including both animal-based and crop-based products. Some of the new products are being produced on a large-scale basis (e.g., ethanol, industrial glues, naturally cured hams, wines) and more on a small-scale basis (e.g., aquaculture seedstock, romaine lettuce, private label food products).
- *Farm income generation*—The estimated new gross income generated by the investments for non-model projects is substantial. For every \$1 invested in non-model projects, there was \$1.87 in new farm income generated. Over the study period, the estimated new farm income was \$42 million per year for a total of \$161 million. The livestock projects had the largest impact on new income, followed by the marketing and promotional investments.
- *New jobs*—Non-model projects were not large job creators for rural Kentucky. About 1,300 total new jobs are related to these investments, mostly part-time, seasonal jobs.
- *Leveraged resources*—Most of the project participants leveraged funds for their ADF project. In total, the \$86 million from the ADF was matched with \$96 million in participant equity or borrowed funds. Medium- and small-sized projects matched the ADF funds on a 2:1 ratio.
- *Tobacco farmers*—The surveys and interviews confirmed that the non-model projects impacted an estimated 50,000 current and former tobacco producers. The Kentucky Beef Network and the Kentucky Cattlemen’s projects had the most impact on tobacco farmers, and the horticulture investments also had broad impact.
- *Tobacco-dependent communities*—The new farm and business income generated by the investments in non-model projects also had a secondary impact in the form of new income in rural communities. Using economic base multipliers for production agriculture and processing from UK researchers, it is estimated that the total new income impact from the investments in non-model projects was \$325 to \$355 million, primarily in central and western regions.

The specific major impacts by project category and size are summarized in Table 1.

Table 1. Non-Model Projects, Specific Impacts by Sector and Size, 2001-2007.¹

	No. of projects	Amount of Award (millions)	Amount Leveraged (millions)	Income Generated: ²		Income Generated ² per \$1 of Investment	New or Expanded:			Tobacco Farmers Impacted
				Additional Annual (millions)	Total, 2001-07 (millions)		Markets	Jobs	Products	
Large/Medium Projects by Sector										
Horticulture	12	\$23.6	\$16.4	\$5.8	\$32.0	\$1.36	9	232	71	4,618
Livestock	18	\$18.5	\$17.6	\$18.0	\$58.3	\$3.15	9	117	21	34,822
Added Value, Processing	16	\$18.0	\$42.0	\$5.8	\$24.2	\$1.35	11	210	22	4,115
Education, Leadership, Other	15	\$11.4	\$6.2	\$0.76	\$243	\$0.02	0	35	27	1,909
Marketing and Promotion	3	\$10.6	\$5.6	\$8.8	\$33.9	\$3.19	19	8	34	2,409
Impacts by Sectors	64	\$82.2	\$87.8	\$38.4	\$148.6	\$1.81	48	602	175	47,873
Projects by Size										
Large Projects	31	\$74.3	\$70.8	\$35.0	\$136.4	\$1.84	35	465	108	43,555
Medium Projects	33	\$7.9	\$17.0	\$3.4	\$12.2	\$1.55	13	137	67	4,318
Subtotal	64	\$82.2	\$87.8	\$38.4	\$148.6	\$1.81	48	602	175	47,873
Small Projects ³	111	\$4.3	\$8.6	\$4.1	\$12.8	\$3.00	100	712	347	2,202
Est. Total Impact	175	\$86.4	\$96.4	\$42.5	\$161.4	\$1.87	148	1,314	522	50,075

¹ Projects that were awarded funds in 2007 are not included.

² Estimated.

³ Results extrapolated from a sample of 25 projects.

Estimated Impacts on Key Sectors

The non-model projects were, by their very nature, a diverse set of investments with different goals and strategies. However, there were projects focused on key sectors of the agricultural economy (e.g., livestock production). The non-model projects were categorized as investments by key sector and analyzed for impact.

- *Livestock Production*—The largest impact of the \$18.5 million invested in non-model projects for livestock production was generated by the comprehensive “package” approach to improved technology and marketing implemented by the Beef Network, Kentucky Cattlemen, and Kentucky Dairy Council projects. Through the expansion of PVP cattle and CPH-45 feeder calf sales, income to cattle producers has increased significantly with premiums of \$41/head in CPH-45 sales and \$12/head in PVP sales, on average. Overall, the reputation and marketability of Kentucky cattle were raised. The result is an estimated 2 percentage-point basis improvement. It is estimated that every \$1 invested in all livestock projects has generated \$3.15 in new farm income.
- *Horticulture*—Although most of the vegetable marketing cooperatives have closed, the impact of the investments on non-model projects has been strongly positive. The horticulture sector has continued to grow as vegetable production has continued, wine grapes and wine production have increased, and nursery/greenhouse crops have expanded. About one-half of the 8 percent annual growth rate in horticulture output can be traced directly to the ADF-funded projects, especially the Kentucky Horticulture Council, the Kentucky Grape and Wine Council, and the markets opened by the horticulture cooperatives. Overall, the \$23 million invested in the horticulture sector generated about \$5.7 million in new income per year.
- *Value-Added Processing*—About \$18 million has been invested in 16 value-added processing projects, with participants leveraging \$41 million. Several of these projects have had high impacts: the ethanol plant, the industrial glue production operation, natural ham production, Evan’s Orchard, and Equus Run Vineyards. Although the combined total output of these projects is small relative to the overall post-farmgate economy in Kentucky, they have had a positive impact in improving marketing and raising farm income, generating an estimated \$5.8 million in new income per year.
- *Marketing and Promotion*—Almost \$11 million has been invested in primarily two marketing improvement projects: the Kentucky Department of Agriculture promotional work with “Kentucky Proud” and the marketing assistance work by Allied Food Marketers West. Careful analysis indicates the “Kentucky Proud” state branding effort is one of the most successful in the United States. The Allied Food Markets West project was plagued with financial issues and conflicts of interest; however, some positive work was completed. Overall, the marketing projects generated an additional \$8.7 million in new farm income per year, or \$3.19 per dollar invested.
- *Education and Leadership*—Over \$11 million has been invested in a diverse set of projects which range from leadership education for young Kentuckians in agriculture and agribusiness to the widely admired digital ag curriculum for Vo-Ag teachers and welding education for farmers. There were also leadership impacts from the work of the County Agricultural Development Councils, primarily strengthening the relationships among local agricultural organizations.

Project Performance Rankings

Over 90 percent of the expenditures for non-model projects were devoted to large and medium-sized projects. Because such a large proportion of non-model expenditures was invested in these projects, site visits and interviews were completed for each project, and a system was developed to rank performance. Utilizing data from the survey and expert group discussions, each project was ranked on activities initiated, goals achieved, and evidence of positive impacts (see Table 2).



Every \$1 invested in all livestock projects has generated \$3.15 in new farm income.

Table 2. Large and Medium Projects—Rated on Goals and Impacts (based on site visits through 2007).

Rating	Award Recipient	Project Description	Award
★★★★★	Commonwealth Agri-Energy	Ethanol plant	\$9,311,000
★★★★★	Kentucky Horticulture Council	Horticulture marketing and technical support	\$8,685,671
★★★★★	Kentucky Beef Network	Beef cattle marketing and technical support	\$8,545,863
★★★★★	Kentucky Department of Agriculture	Marketing and promotion	\$5,329,300
★★★★★	Little Kentucky Smokehouse	Ham processing expansion: Kentucky Fresh Pork, Natural Kentucky Premium Pork	\$1,950,000
★★★★★	Siemer Milling	Wheat-based glue extender facility	\$1,000,000
★★★★★	Burton Livestock, LLC	Dairy Heifer Custom	\$424,818
★★★★★	Equus Run Vineyards, LLC	Winery expansion	\$263,825
★★★★★	Evans Orchard and Cider Mill, LLC	Apple cider processing	\$122,923
★★★★	Kentucky Cattlemen's Assoc.	Collaborative marketing (Beef Council, Pork Producers, WKGC, GE)	\$1,930,000
★★★★	KCARD	Center for Cooperative Development	\$1,250,460
★★★★	Buffalo Trace ADD District	Agricultural Revolving Loan Fund for Buffalo Trace Area	\$1,000,000
★★★★	Boone's Abattoir	Livestock slaughter and processing facility	\$572,676
★★★★	Kentucky Thoroughbred Owners and Breeders	MRLS Research I and II	\$501,200
★★★★	Katelyn's Honey, Inc.	Private label value-added food products manufacture	\$293,850
★★★★	Murray State University Foundation, Inc.	Ag diversification demonstration and education	\$257,995
★★★★	Kentucky Vo-Ag Teachers Association	Statewide digital ag curriculum	\$250,000
★★★★	Roundstone Native Seed, LLC	Native grass seed production	\$202,600
★★★★	University of Kentucky - KALP	Leadership development program	\$146,360
★★★★	Thoroughbred Shrimp Company	Freshwater prawn seedstock hatchery	\$125,000
★★★	Kentucky West Nursery Co-op	Nursery Stock Cooperative	\$4,788,966
★★★	University of Kentucky—KECI	Entrepreneur development for NE Kentucky	\$1,282,206
★★★	Lake Cumberland Milling	Grain milling	\$1,165,000
★★★	Kentucky Community and Technical College System	Computers for farmers	\$1,155,000
★★★	Central Kentucky Growers Co-op	Vegetable management recruitment and equipment	\$1,033,988
★★★	Kentucky Grape and Wine	Technical assistance for grape and wine production	\$785,125
★★★	Creech Services	Compost production expansion	\$618,309
★★★	Aquaculture of Kentucky, Inc.	Fish hatchery, fingerlings for aquaculture, value-added smoked fish products	\$411,500
★★★	Kentucky Forage and Grasslands Council	Forage education and extension marketing assistance	\$362,561
★★★	Christian County Grain, Inc.	Specialty grain marketing	\$327,419
★★★	Shuckman's Restaurant Service, Inc.	Smoked fish aquaculture products	\$300,000
★★★	Kentucky State University Bee Project	Honey extraction facilities for producers	\$292,750
★★★	Community Ventures Corporation	Ag micro-loan program	\$275,000
★★★	Kentucky Highlands Investment Corp.	Ag micro-loan program	\$158,750
★★★	Maysville Community and Technical College	Welding and diesel courses for farmers	\$124,800
★★★	Fishmarket Seafoods, Inc.	Freshwater prawn processing and marketing	\$109,250
★★★	Kentucky Poultry Federation	Poultry indemnity fund	\$102,000
★★	Allied Food Marketers West	Consulting firm to help Kentucky farmers and agribusinesses with business planning, market consulting, business development and brand development.	\$4,891,561
★★	West Kentucky Growers Co-op	Vegetable cooperative development and expansion	\$3,760,326
★★	Kentucky FFA Foundation	Youth endowment program	\$2,000,000
★★	Friends of 4-H	Youth endowment program	\$2,000,000
★★	Bath County Ag Marketing Center	Build, develop marketing facility in conjunction with new Extension Office Educational Center	\$1,520,000
★★	Green River Growers Co-op	Vegetable co-op operating capital and equipment	\$1,258,946
★★	Purchase Area Aquaculture Co-op	Cooperative storage and handling facility improvements	\$1,191,525
★★	Cumberland Farm Products	Vegetable co-op equipment and operating capital	\$684,649
★★	Goodinview Farms, Inc.	Vegetable packing facility equipment and operating losses	\$439,537
★★	In Town Winery, LLC	Winery development (equipment)	\$295,509
★★	John's Custom Meats	Livestock slaughter and processing facility	\$250,000
★★	Commodity Growers - Buffalo Trace Auction	Produce and hay auction	\$220,000
★★	Elmwood Stock Farm	On-farm compost manufacturing	\$143,100
★★	Shady Lane Poultry Farm, Inc.	Poultry hatchery for pastured poultry production seedstock	\$105,000
★★	Kentucky Beekeepers Association	Kentucky adopted honeybee development	\$100,103
★★	Appalachian Sweet Sorghum Marketing Association, Inc.	Sorghum processing and marketing co-op	\$100,000
★	Pig Improvement Corp.	Hog breeding facility construction	\$800,000
★	Knotwood Craftsmen Investments, Inc.	High-tech woodworking facility and woodworking school	\$642,000
★	Southeast Kentucky Agriculture Cooperative	Vegetable marketing co-op	\$352,525
★	Burns Larkins Farm, LLC	Goat demonstration farm	\$259,910
★	Apolimmune	Bio-research - medical use compounds from tobacco plants	\$255,000
★	KentuckyVirtual.com	Internet marketing	\$250,000
N/R	Kentucky Dairy Development Council	Infrastructure development	\$2,450,170
N/R	Owensboro Grain	Biodiesel facility and equipment	\$1,151,250
N/R	Kentucky Agriculture Heritage Center	Agricultural Heritage Center study and design	\$1,000,000
N/R	Agritourism Interagency	Kentucky Department of Agriculture and Kentucky Department of Tourism, to develop and promote agritourism in Kentucky	\$400,000
N/R	Kentucky Sheep and Wool Producers, Inc.	Establish goat and sheep industry development office	\$184,000
Total Amount ADF Funds—Large and Medium Projects			\$82,161,276

- ★★★★★ All goals accomplished; evidence of sustained positive impacts; indications that benefits are greater than ADB investment.
- ★★★★ All goals accomplished; clear, documented positive impacts.
- ★★★ Most or all goals accomplished; evidence of positive impacts.
- ★★ Most or all project activities or goals attempted; limited evidence of positive impacts.
- ★ Few or no goals accomplished; no impacts.
- NR Not rated; project too new at site visit.



The \$86 million invested to date in non-model projects has resulted in an estimated \$161 million in additional farm income.

The majority of non-model projects accomplished most or all goals by the time of the site visit. As would be expected in venture capital financing, there are non-performing projects which deserve further examination to determine the source of the problems. Five projects were not rated (“NR”) because they were not yet in operation or had only recently received funding.

Analysis of County Non-Model Investments

County Councils spent \$20 million on non-model investments. These funds supported a wide variety of projects. Because of spending classifications, 41 percent of these funds still were used for model programs. There were 181 investments for a total of \$4.1 million in group marketing or value-added processing facilities. County Council members identified a wide variety of anecdotal evidence for positive impacts, but the actual impacts could not be analyzed.

Conclusions

1. The ADF’s investments in non-model projects have had a significant positive impact on agriculture and agribusiness. From 2001 to 2007, the \$86 million invested has resulted in an estimated \$161 million in additional farm income, created or expanded markets for 148 products, and generated about 1,300 new jobs.
2. On average, every dollar invested from the ADF in non-model projects resulted in \$1.87 of additional farm income. Additional income was highest for marketing and promotion (\$3.19) and livestock (\$3.15). Project participants leveraged \$96 million in additional funding.
3. Across large, medium, and small projects, investments have helped to create new markets, expand existing markets, and develop new products.
4. Investments in non-model projects have involved about 50,000 tobacco farmers. Some tobacco-dependent communities have been affected; however, this impact has been much less in northeast and eastern Kentucky, where traditional burley production has declined.

Recommendation: GOAP should encourage community-based economic development project proposals from regions where there exists potential for agriculturally-based ventures, especially in northeastern and eastern Kentucky.



Comprehensive approaches have been effective and have produced broad positive impacts.



5. Investments in non-model projects have been only modest generators of new jobs, about 1,300 including full- and part-time jobs.

6. The ADF investments in “comprehensive approaches” that combined education, technical assistance, infrastructure, marketing, and cost-share, such as the Horticulture Council and Beef Network projects, have been effective and produced broad positive impacts.

7. Eleven of the 31 large non-model projects and 9 of 33 medium non-model projects have accomplished all goals with documented evidence of positive impacts. Nine large projects and 10 medium projects are low-performing or non-performing.

Recommendation: The ADB should continue to fund ‘risky’ new ventures which stimulate new markets, expand the value chain, and encourage value-added processing.

8. The “failure” of some earlier investments (e.g., marketing co-ops) still resulted in advancements in new enterprises, new on-farm technology, production of new crops, and contract marketing.

Recommendation: The ADB should establish practical, even if lengthy, timelines for project implementation with reasonable investment in management and training, if needed, to improve long-run project viability.

9. The non-model projects have had broad impacts across key sectors of the agriculture economy.

- *Livestock*—\$18 million invested with additional income generated of \$16 million per year.
- *Horticulture*—\$23.6 million invested generates an estimated \$5 to \$6 million per year of additional farm income.
- *Value-added processing*—\$18 million invested leveraged \$41 million in private investment and \$5.7 million in additional farm income per year.
- *Marketing and promotion*—\$10 million invested, with “Kentucky Proud” generating an additional \$7.8 million in farm income per year.

Recommendation: The ADB should seek a private sector-based partner to collaborate with the KDA on supplying marketing assistance to small agricultural entrepreneurs. The 5% of total funds invested in small projects should be increased since small projects with specific scopes and objectives have had high payoff.

10. It appears that earlier ADF investments were made in riskier and less traditional venture capital projects as compared to more recent investments.

Recommendation: Seek collaboration with KAFC in providing coordinated financial assistance for new ventures which reduces risk through a blended strategy of grant and loan funding.

11. The non-model project reporting system is comprehensive, but the GOAP appears to lack the staff necessary to fully utilize information from these reports or monitor the performance of all projects. Relatively too much staff time was involved in feasibility analysis versus project monitoring.

Recommendation: GOAP staff should more carefully track and monitor award recipients, using site visits to assess strategies and investment performance. Every three years the GOAP should commission a major impact evaluation.

12. There have been a few serious issues in project administration, including private sector marketing assistance that did not accomplish goals and resulted in conflicts of interest, inconsistent terms and conditions of forgivable loans, competing projects funded in the same geographic area, and no coordination between non-model project financing and KAFC financing.

Recommendation: The ADB needs a clear policy on conflicts of interest for award recipients and should rationalize the provisions for forgivable loans.



The County Model Programs

Investments in county model programs were typically small, averaging \$1,387 per award, with the total Agricultural Development Board (ADB) investments approaching \$100 million with over 72,000 participants. Producers were required to invest at least an equal amount but typically invested much more.

Methodology and Data

Data originated from county model program reports completed by producers or farm representatives assisted by county agricultural agents for each cost-share investment or program area and were submitted to the Governor's Office of Agricultural Policy (GOAP). Reports were submitted electronically using Microsoft Excel®.

Expert Groups

Expert groups were employed to evaluate data for impact assessment and reporting forms for improvement.

Analysis of Impact

Major Model Programs

Participants in the Cattle Genetics Improvement, Cattle-Handling Facilities, Forage Improvement and Utilization, and Hay, Straw, and Commodity Storage programs were primarily (~90 percent) beef producers. These programs were the top four programs in terms of participation (78 percent) in projects for county model programs and accounted for 72 percent of the money invested. Investments in the program averaged \$1,284 per award. Administering agencies developed local leadership and involved young farmers, and educational programs encouraged adoption of science-based farming practices. Net farm income increased in well-established agricultural sectors, especially through increased access to value-added markets. Animal health and human and animal safety were improved through program participation. Programs that shared the costs of durable equipment and

There were over
72,000 model program
participants, averaging
\$1,387 per award.



Model programs have contributed to agricultural diversification in Kentucky.



structures (facilities, storage) are expected to provide returns on investments for 10 to 20 years or more.

Diversification Programs, Agricultural

Equine; Fruit and Sorghum; Vegetable, Mushroom and Herb; Commercial Ornamental Horticulture; and Pasture Poultry and Other Fowl Programs are effective and have contributed to agricultural diversification in Kentucky. Agritourism, Certified/Commercial Kitchens, Greenhouse Conversion/Construction, Honeybees, Sheep, Technology, and Timber Programs have made modest contributions and aided few producers. In some cases, access to the programs may be an issue. Commercial Aquaculture, Rabbits, and Sod Production Programs have offered minor contributions to Kentucky agriculture.

Diversification Programs, Other

Commercial Poultry, Swine, and Dairy Programs are clearly not generating new producers or establishing new marketing options. The nature of these industries does not provide the right environment to entice many new producers or provide other diversification options, and these programs should not be labeled as diversification programs. The goat investment area and, to a much lesser extent, the sheep investment area are promoting diversification through establishing new producers and promoting new market options.

Other Model Programs

The Farm Livestock Fencing Improvement Program was highly successful, allowing farm owners to establish more pasture for their cattle and other livestock. This program primarily impacted beef operations. Net farm income was improved, and pasture and hay fields were expanded. Carrying capacity was increased, and improvements increased the grazing season to reduce dependence on stored feed. The On-Farm Water Enhancement Program investments were primarily used for cattle operations. Good-quality water is an essential element of any livestock op-

Table 3. Model Programs Statistics, 2001-2007.

Major Programs	Investments	Participants	Average/ Participant	Investment Distribution	Rank	Participant Distribution	Rank	Counties
Forage Improvement and Utilization	\$21,467,255	17,496	\$1,226	21.52%	1	24.25%	1	103
Cattle-Handling Facilities	\$19,516,463	15,073	\$1,294	19.57%	2	20.89%	3	101
Cattle Genetics Improvement	\$11,910,751	16,602	\$717	11.94%	4	23.01%	2	104
Hay, Straw, and Commodity Storage	\$19,061,126	6,867	\$2,775	19.11%	3	9.52%	4	99
Diversification Programs								
Agricultural Diversification	\$11,840,156	5,312	\$2,228	11.87%	5	7.36%	5	97
Commercial Poultry Diversification	\$114,783	35	\$3,279	0.12%	11	0.05%	11	4
Dairy Diversification	\$1,235,060	411	\$3,250	1.24%	9	0.57%	10	29
Goat and Sheep Diversification	\$3,323,766	4,294	\$774	3.33%	7	5.95%	7	89
Swine Diversification	\$47,516	17	\$2,795	0.05%	13	0.02%	13	8
Other Programs								
Farm Livestock Fencing Improvement	\$8,813,429	4,674	\$1,885	8.84%	6	6.48%	6	67
On-Farm Water Enhancement	\$1,477,187	771	\$1,915	1.48%	8	1.07%	8	23
Technology	\$832,142	563	\$1,478	0.83%	10	0.78%	9	28
Timber Production, Utilization, and Marketing	\$110,165	36	\$3,060	0.11%	12	0.05%	11	7
Total	\$99,749,805	72,151	\$1,386					

eration, and two years of drought have made water issues more critical. New pasture development and adoption of rotational grazing justify investment in this program. Parts of the Technology Program were successful, and others were not. Producers are increasing acceptance of precision agriculture and using computers to track finances, cattle performance, and farming practices but are not adopting satellite broadband. The Timber Production, Utilization, and Marketing Program helped woodland owners recognize their assets.

Shared-Use Equipment Program

The total ADB investments were \$1,125,985 for 2001 through 2007. Fifty-four counties reported participation in the Shared-Use Equipment Program with the majority (35) reporting multiple items purchased. Loan fees, in some cases, have generated enough revenue to buy comparable equipment while maintaining the initial equipment, making this program self-sustaining. See Table 3 for the statistics of all of the model programs.

Conclusions

Forage Improvement and Utilization Program

The Forage Program has resulted in additional net farm income for participants. Science-based decisions (soil testing, renovation, improved seed varieties) in forage management have increased through program participation. A high number of forage producers have realized economic benefits and adopted best management practices in their forage operations.

Cattle-Handling Facilities Program

The Cattle-Handling Facilities Program increased net incomes for a high number of cattle producers (primarily beef producers) through labor savings, reduction of medical expenses and lost work time, improved herd health and productivity, and access to value-added markets. The ability to adopt/enhance science-based management and health-care practices is facilitated by the cost-share equipment and structures. Farm safety experts indicated the ADB should consider implementing cattle-related injury prevention/general safety training sessions in conjunction with the Cattle-Handling Facilities Program.



Forage producers have realized economic benefits and adopted best management practices.



Sustainability of herd genetic improvement may be challenged by lifetime maximum participation levels.



Cattle Genetics Program

Nearly 15,000 bulls were purchased as a result of the Cattle Genetics Program. However, the advantages of artificial insemination are not being fully exploited. Bulls were selected using the science-based approach of expected progeny differences (EPD) data to match producers' management and marketing systems. Increases in net income through genetic improvement of herds can be attributed to:

- improved breeding programs.
- increased calving percentage.
- decreased losses due to dystocia and other health problems.
- value-added market participation.

Sustainability of herd genetic improvement may be challenged by lifetime maximum participation levels. Inflated costs of high-quality bulls may cause producers to go back to purchasing inferior breeding stock.

Hay, Straw, and Commodity Storage Improvement Program

The Storage Program has allowed nearly 7,000 producers to improve farm income by:

- reducing hay/straw losses through inside storage.
- saving on feed costs by utilizing on-farm feed and purchasing bulk commodities.
- pursuing cash hay and straw markets.
- reducing labor costs associated with hay and grain handling.

Facilities established through this program amplify the return on investment over many years.

Diversification Programs, Agricultural

- *Agritourism*—The goals of this investment area were achieved for those few who have utilized this program. The relatively high percentage without liability insurance is of great concern.
- *Commercial Aquaculture Production*—The aquaculture investment areas may have encouraged a few producers to try aquaculture, but it is not known whether those producers are still active. There are indications but no confirmation that existing operations benefited.
- *Certified/Commercial Kitchen Construction or Renovation*—While this program has significant potential, very few counties offered it.
- *Direct-to-Consumer Livestock Production*—This investment area has promoted diversification by encouraging producers who had not previously utilized direct-to-consumer livestock sales. It has been successful in promoting an alternative marketing system for the majority of participants in this program.
- *Equine Production*—Very few respondents were new to the equine business, although participants developed different types of operations. Interest is expected to increase due in part to the World Equestrian Games and equine incentive programs.
- *Commercial Fruit and Sweet Sorghum Production*—This program created diversification by increased production or adoption of different types of production. Many new producers diversified into fruits and sweet sorghum production. All goals were met, and the program was one of the most successful diversification programs.
- *Greenhouse Construction or Conversion for Horticultural Enterprises*—This investment area accomplished two of three goals by assisting former tobacco producers to reconfigure their tobacco transplant greenhouses so that they could produce horticultural crops and by assisting producers with the construction of new greenhouses. There is no indication that this investment has helped develop a year-round horticultural industry in the state.

Small Animal Production

- *Honeybees*—A relatively high percentage of participants considered their prior experience as a hobby. Investments helped many begin to think of their hobby as more of a commercial venture. Equipment investments should pay dividends for several years.
- *Rabbits*—Data were insufficient to determine the viability of this investment area. However, anecdotal evidence suggests that, for the 44 participants, the goals of the small animal program were met.
- *Production of Commercial Ornamental Horticultural Products*—Few were new to this business, but others used the investment to diversify by pursuing other types of horticultural crops. These investments are expected to continue to produce similar improved returns over the life of the cost-share improvements.
- *Poultry Production: Pastured and Other Fowl*—Most of those who participated were new to this enterprise. Two producers who appeared to be commercial poultry operators prior to investment were diversifying into pastured poultry. The goals were achieved by this investment area.
- *Commercial Vegetable, Mushroom, and Herb Production*—While most participants were already in the commercial vegetable, mushroom, and herb business, they used cost-share funds to diversify within this business and to expand their operations. The returns on investment were high for this investment area. Investment area goals were achieved.
- *Sod Production*—There is no indication that this area has been utilized.

Diversification Programs—Other

- *Commercial Poultry Diversification Program*—Benefits may be primarily labor savings rather than increased sales due to contract sales. None of those reporting were new to commercial poultry production. Although other goals were met, the goal to assist new producers may have been overly optimistic.
- *Dairy Diversification Program*—Producers indicated other improvements besides increased sales as benefits. This program did not encourage new dairies. Pursuing other markets is not a likely area for diversification either. A few dairy producers appeared to be reaching investment caps.

Goat and Sheep Diversification Program

- *Goats*—Large numbers of producers were affected even though total investment was relatively small. Although only 24 percent were new to goat production, producers were diversifying into more markets. Some of the benefits may also include improved herd health, ease of handling, and improved genetics within the herd. Goals for the goat part of the program were achieved.
- *Sheep*—The sheep participation was small in comparison to goats. Although only 23 percent were new to sheep production, producers were diversifying into more markets. Some of the other benefits may include improved flock health, ease of handling, and improved genetics within the flock. There is no indication that the sheep diversification program has helped improve wool quality in Kentucky.
- *Swine Diversification Program*—The goal to enable farmers to begin a swine enterprise was not achieved.

Other Programs

- *Farm Livestock Fencing Improvement Program*—The farm livestock fencing improvement program was highly successful, allowing farm owners to establish more pasture for their cattle and other livestock. This program primarily impacted beef operations, as did the four major model programs. Net farm income was improved, and pasture and hay fields were expanded. Carrying capacity was increased, and improvements were made that may increase the grazing season, thereby reducing dependence on stored feed. This program attracted the sixth largest number of producers.



Large numbers of goat producers were affected even though total investment was relatively small.



Considerable thought should be devoted to how future funds will be invested as numerous producers are reaching the participation caps.



- *On-Farm Water Enhancement Program*—New pasture development and adoption of rotational grazing are enough benefits to justify investment in this program.

Technology Program

- *Precision Agriculture*—Producers were attracted to precision agriculture equipment for the first time. Participants were typically large farmers, but some were from counties with smaller fields, indicating a wider acceptance and scope to this program.
- *Animal Data Management*—Goals were achieved for this investment area. All approvals are not returned in a timely manner by the Kentucky Beef Network.
- *Computer Hardware and Record Management Software*—Seventy percent were still using a handwritten ledger, and 3 percent were not keeping records prior to investment. It is difficult to assess the true benefits of record keeping, but good records are key when determining business status.
- *Satellite Broadband*—With availability of other broadband access limited and the majority of agricultural support Web-based, this investment area should not be dropped unless the availability of other sources is confirmed. However, no participation was apparent for this investment area.
- *Timber Production, Utilization, and Marketing Program*—This program attracted few participants, but, of those reporting, the majority were new timber producers. This is an underutilized resource that many producers have but do not manage or consider as an asset.
- *Shared-Use Equipment Program*—The shared-use equipment program is a special program that may have provided the most impact of all the county model programs. For the most part, it is self-sustaining through the assessment of rental fees. Many counties have generated revenue to purchase new equipment while maintaining existing equipment. A 50 percent cost-share may be difficult for limited-resource counties to generate, and finding an organization willing to administer the program may be another limiting factor. Concern regarding liability, dedicating time to administer the pickup and delivery of the equipment by producers, and the collection and accounting of the fees assessed may prevent some county groups from assuming the responsibilities.

Summary

County model programs have been highly successful in improving producers' knowledge, farming operations, and net returns. The programs aided a large number of former tobacco producers. Counties have contributed by imposing guidelines to distribute funds to as many producers as possible. County councils were given autonomy to choose the types of programs that best served their counties. However, the primary area of emphasis has been the beef industry, which has benefited either directly or indirectly from approximately 70 percent of the cost-share funds invested by the ADB. Producers have moved from a high dependence on tobacco to a high dependence on beef cattle. Considerable thought should be devoted to how future funds will be invested as numerous producers are reaching the participation caps. County model programs bolstered the infrastructure of Kentucky agriculture and provided the knowledge base for producers to make informed decisions regarding input costs, production levels, and projected demand whether they are influenced by weather, the economy, health issues, or consumer preferences.

Data Collection and Reporting Conclusions and Recommendations

The reporting system needs to be streamlined to improve future impact assessment. Report forms allow the input of variable data that lead to misinterpretation, spelling errors, and inconsistent answers that are difficult to analyze. Dropdown lists with units where appropriate are recommended.



The Kentucky Agricultural Finance Corporation

In 2002, the Agricultural Development Board (ADB) considered the Kentucky Agricultural Finance Corporation (KAFC) as an option to provide access to capital for agricultural diversification and infrastructure projects as part of the Long-Term Plan for Agricultural Development. Subsequently, the ADB initially awarded the KAFC \$20 million and has since added more funds.

KAFC Loan Programs

There are four primary KAFC loan programs funded by the Agricultural Development Fund (ADF): the Agricultural Infrastructure Loan Program (AILP) and Beginning Farmer Loan Program (BFLP), which are indirect loan programs; and the Agricultural Processing Loan Program (APLP) and Coordinated Value-Added Assistance Program (CVLP), which are direct loan programs. As of mid-2008, the KAFC has approved 249 projects and committed over \$26 million.

Evaluation Criteria and Approach

The KAFC Board shares the vision of the ADB that marketing and market development are the top priorities (see 2007 Annual Report). The ADB Priority No. 2 shows that the Board supported reactivation of the KAFC to “provide financing for products and businesses where there is limited financial history.”

To evaluate the effectiveness of the KAFC loan programs, the UK Evaluation Team examined the list of all 218 outstanding loans as of spring 2008. A representative sample of 20 loans was selected, based on loan type, purpose, and location. Data were collected from KAFC files on all 20 sample loans, and a standardized questionnaire was developed for site visits and interviews with both borrowers and lenders.

The interviews revealed that about 75 percent of borrowers were made aware of KAFC loan opportunities through their lender or direct contact with the KAFC staff. Both borrowers and lenders made positive comments about the KAFC loan process, but several lenders expressed frustration with the “slow” decision-making process. All the loan projects visited by the UK Evaluation Team were completed and in use. Most of the borrowers agree that their project will have a long-term

KAFC has approved
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million.

KAFC Site Visits

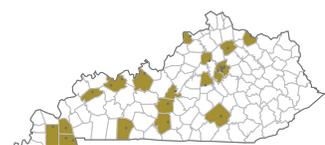


Table 4. KAFAC Loans through May 2008.

Loan Category	Number of Loans
AILP: 177 loans, 81% of total	
Tobacco	73
Grain	31
Dairy	18
Poultry	16
Beef	10
Swine	9
Equine	8
Forage/Hay	5
Other	5
Vegetable	2
BFLP: 36 loans, 17% of total	
Land	19
Barns	10
Farm shop building	4
Livestock	3
APLP: 4 loans, 2% of total	
Timber	2
Bio-fuel	1
Pharmaceuticals	1
CVALP: 1 loan, 0% of total	
Operating funds	1
Total Number of Loans	218

Loans were put to the following purposes:

Barns, 149; grain bins, 30; farm land, 19; equipment, 4; processing, 4; farm shop buildings, 3; livestock, 3; operating loans, 1.



There has been a substantial amount of leveraging for the KAFAC loan funds.

impact on their business. Survey results show that the borrowers and lenders overwhelmingly agree that the ADB funds have been used in a manner consistent with the investment philosophy.

Loan Portfolio

The following tables show the types of KAFAC loans (Table 4) and the dollar amounts for each of the KAFAC loan programs as of May 2008 (Table 5). The majority of loans (81 percent) have been made through the Agricultural Infrastructure Loan Program (AILP), primarily for tobacco barns and grain bins. The second largest loan category is the Beginning Farmer Loan Program (BFLP) (17 percent), in which about half of the borrowers purchased land and the others built barns or purchased equipment or livestock. Only four loans have been made through the Agricultural Processing Loan Program (APLP); however, these were for large amounts that encumbered 40 percent of the total KAFAC loan fund. Only one loan has been made through the Coordinated Value-Added Assistance Loan Program (CVALP).

There has been a substantial amount of leveraging for the KAFAC loan funds. Averaging over all four KAFAC loan programs, the KAFAC has loaned 28 percent of the total project costs, a 3:1 leverage ratio.

Analysis of Impacts by Loan Program

The estimated impacts of KAFAC loan programs were based on the data for the representative sample from KAFAC loan files, site visits and interviews, and the analysis from the expert group.

Agricultural Infrastructure Loan Program

The AILP has had the most loan activity, mostly for tobacco barns and grain storage bins in western Kentucky. All of the borrowers interviewed cited the lower interest rates as the primary reason they pursued a loan with the KAFAC. The impacts of these investments would include both enterprise expansion and improved prices from the sales of high-quality products (due to better storage or more timely marketing).

However, when borrowers were asked, "Would this loan have happened without the KAFAC loan program?" 86 percent of the AILP borrowers interviewed replied in the affirmative. If this result is characteristic of all AILP borrowers, then the actual impact of this KAFAC loan program is limited to the reduced interest rate (interest subsidy). Some of the borrowers stated they would not have done the project as soon as they did or maybe not as large without the lower KAFAC interest rates. This indicates that low-interest financing is encouraging technology adoption and expansion of production. But if most AILP borrowers can obtain financing elsewhere, the KAFAC is essentially duplicating conventionally available agricultural credit.

In the representative sample, the average net worth for AILP borrowers was \$2.8 million (see Table 6). One borrower with very high net worth (\$12.4 million) skews the average upwards, so removing this borrower and recalculating results in an average net worth of \$1.7 million. This is considerably higher than the net worth of the average UK Kentucky Farm Business Management Program (KFBM) participants (\$1.4 million) and twice the estimated net worth of "family farms" in the United States (\$900,000). If the ADB passed funds to the KAFAC "for products and businesses where there is limited financial history," then the AILP loan portfolio does not effectively accomplish the ADB's original intention for the KAFAC funding.

Table 5. Kentucky Agricultural Finance Corporation Loan Statistics as of May 2008.

KAFAC Program	Loan Amounts	% of Total Funds		% Funded by KAFAC
		Loaned	Project Costs	
Ag Infrastructure Loans	\$10,137,232	44%	\$31,235,418	32%
Beginning Farmer Loans	\$2,886,095	12%	\$11,398,238	25%
Ag Processing Loans	\$9,203,000	40%	\$31,756,000	29%
Total*	\$23,193,437	96%	\$78,258,096	30%

* Because only one Coordinated Value-Added Infrastructure loan was awarded, statistics are not reported for privacy reasons.

Beginning Farmer Loan Program

The K AFC completed 36 Beginning Farmer loans as of May 2008. Five beginning farmers who received loans were interviewed as well as several lenders who have had multiple experiences with the program.

The Beginning Farmer financing program addresses two serious issues in modern farming: high capital requirements for entry and intergenerational transfer of ownership. The K AFC Beginning Farmer Loan Program directly addresses these issues by providing long-term, low-interest financing at start-up or for intergenerational transfer of existing farms.

Four out of five borrowers and all of the lenders interviewed indicated that the BFLP loans would not have happened without the K AFC participation. In the case of land purchases, beginning farmers were able to borrow the down payment funds from the K AFC. This lowered the risk for the participating lender as the K AFC would take a second position behind the participating lender on the mortgage.

Among the BFLP loans in the representative sample, the average net worth of the Beginning Farmer loans was \$133,644. This is modest capitalization for a new agricultural entrepreneur and certainly in keeping with the spirit of the ADB's Priority No. 2.

The impacts on farm income from the BFLP are difficult to measure because these are mostly loans to purchase land, in which case the future income would be a projection of anticipated results. However, it can be reasonably concluded that all of the BFLP loans have resulted in assisting beginning farmers to start operations in an industry with substantial barriers to entry.

Agricultural Processing Loan Program

There were four APLP loans made as of May 2008. Two of the loans were for wood processing firms, another was for plant-based pharmaceutical production, and one was for new bio-diesel fuel processing.

The APLP financing accounts for only 2 percent (4 of 218) all K AFC loans but 40 percent of the value of the total K AFC portfolio. Three of the four loans were included in the representative sample of APLP loans included in this evaluation (the fourth was in the non-model projects evaluation).

The average net worth for the APLP borrowers was \$2.2 million. Since these are existing processing firms, the amount of net worth should be considered in light of the goal of working with firms having "limited financial history." However, in all four cases, the APLP borrowers stated they could have borrowed the money elsewhere. The plant-based pharmaceutical manufacturer indicated the company had a very short time line to act on its purchase of an existing facility under bankruptcy proceeding. The assistance of the K AFC staff was instrumental to being able to act quickly to acquire the property.

All of the businesses are adding value to Kentucky agriculture products. In addition, the four APLP borrowers have added 28 full-time employees as a result of their expanded operations. However, actual impacts are difficult to assess because these projects could have been financed elsewhere, plus two of the projects were still under construction or not yet in full production at the time of the site visits. At some point, impacts of these four projects (setting aside concern about alternative financing) could be estimated in terms of additional income generated by

Table 6. Net Worth Comparison: K AFC vs. KFBM vs. U.S. Family Farm Average.

Project Description	K AFC Amount	Project Cost	Net Worth Listed on Application
Agricultural Infrastructure Loan Program			
Barn	\$20,000	\$37,666	\$235,861
Barn	\$100,000	\$758,249	\$12,431,905
Renovations	\$50,000	\$113,841	\$1,198,000
Barn	\$21,500	\$43,000	\$1,112,241
Bin	\$44,000	\$88,000	\$6,927,012
Barn	\$98,000	\$149,427	\$4,447,096
Barns	\$100,000	\$353,800	\$976,001
Barns	\$100,000	\$848,981	\$463,886
Barn	\$18,250	\$36,500	\$466,860
Barns	\$61,377	\$125,506	\$828,076
Bin	\$35,000	\$59,176	\$1,180,290
Average Net Worth per Loan			\$2,751,566
Beginning Farmers Loan Program			
Tractor	\$12,597	\$25,195	\$132,889
Purchase Farm	\$100,000	\$254,300	\$254,300
Farmland	\$37,500	\$150,000	\$25,491
Equipment	\$100,000	\$200,000	\$217,639
Farmland	\$100,000	\$246,632	\$37,900
Average Net Worth per Loan			\$133,644
Agricultural Processing Loan Program			
Equipment	\$550,000	\$1,250,000	\$4,108,068
Processing	\$3,600,000	\$8,400,000	\$188,049
Processing	\$53,000	\$106,000	\$2,314,900
Average Net Worth per Loan			\$2,203,672

Since only one Coordinated Value-added Infrastructure loan was awarded, statistics are not reported for privacy reasons.

Other Measures of Net Worth

KFBM Average Net Worth By Farm Type*	
All Kentucky Farms	\$1,337,098
Grain	\$1,515,202
Hog.....	\$892,000
Dairy	\$1,140,234
Beef	\$860,000
USDA ERS "Family Farm" Average Net Worth	
"Family Farms"	\$860,000

* 2007 Kentucky Farm Business Management Program



High net worth AILP and APLP borrowers raise the question of how effectively the current loan portfolio addresses the ADB goal of improved capital access to those with “limited financial history.”



multiplying the total annual revenue from the new operations by the percentage of financing provided by the KAFC. It seems clear that the APLP loans have the potential to contribute positively to the ADB goals, but it is not possible to make conclusive statements at this time.

Coordinated Value-Added Assistance Loan Program

The KAFC has completed only one CVALP at the time of the evaluation. This is a large indirect loan providing operating capital. The borrower is providing contract opportunities for other farmers. Therefore, the purposes of the loan are being met, and it appears consistent with the overall goals of the ADB and the KAFC. Due to privacy requirements, details of the sole CVALP loan and impacts are not discussed.

Although the purpose of this CVALP loan is similar to some non-model projects, the level of risk reduction is vastly different. The typical non-model project has a 100 percent forgivable loan, essentially a grant, and the CVALP loan provides only an interest subsidy. If risk reduction to encourage new coordinated ventures is the goal, the CVALP is not offering sufficient incentive to entrepreneurs. In addition, the stipulation that the CVALP can fund only 25 percent of a project severely limits the ability of the KAFC to mitigate risks to encourage new ventures.

Conclusions

1. The KAFC appears to be carefully administering the funds supplied by the ADB for improved capital financing in agriculture. Both borrowers and lenders are pleased with the administration of the program, the KAFC staff are considered helpful and knowledgeable, and there is good financial record keeping—reflecting the collaboration with lenders having due diligence standards. In site visits and interviews, the UK Evaluation Team did not encounter any issues of concern about general program implementation.

2. The outreach educational efforts by the KAFC staff seem primarily focused on agricultural lenders but not farmers. The loan program options are not well understood and recognized by the general farm population.

Recommendation: KAFC should pursue new educational efforts directed at farmers, commodity groups, farm organizations, and agribusinesses.

3. The current loan portfolio is primarily distributed in western Kentucky counties, reflecting the popularity of the Agricultural Infrastructure Loan Program among tobacco and grain producers. If the KAFC is going to expand loan implementation to a more balanced statewide distribution, then loan products will have to appeal to livestock producers and those in horticulture, agritourism, and agribusinesses in central, northeastern, and eastern counties.

Recommendation: Focus outreach efforts towards regions where there is little current loan activity but potential for financing projects with marketing and market development potential.

4. The composition of the current loan portfolio emphasizes low-risk financing of relatively high net worth borrowers. Except for the Beginning Farmer loans (17 percent of all loans), the majority of AILP and APLP borrowers have relatively high net worth and are “experienced” business entities, not new ventures. This raises the question of how effectively the current loan portfolio addresses the ADB goal of improved capital access to those with “limited financial history.”

Recommendation: KAFC should have a clear mission statement that identifies program goals which further the stated mission of the ADF and appropriately targets loan products.

5. The Agricultural Infrastructure Loan Program (AILP) is popular because it provides low, blended interest rate financing, preferences for tobacco producers, a convenient and transparent application process, and low risk to the K AFC and agricultural lenders, and it is favored by producers of traditional major crops. However, the projects funded by the AILP do not appear to accomplish the market development objective or risk reduction for entities with limited financial history. While infrastructure loans are having a positive impact on the efficiency and profitability of individual producers, the overall program benefit is limited to the interest subsidy because 86 percent of the borrowers would have completed the projects without the participation of the K AFC. AILP may be duplicating loans that are already readily available from private lenders.

Recommendation: To pursue the mission of support for applicants with “limited financial history, the Board should reorient the AILP to better serve beginning farmers, new ventures, and agricultural diversification.

6. The Beginning Farmer Loan Program (BFLP) directly addresses the issues of barrier to entry for new farmers and intergenerational transfer of farm ownership, making it a key loan product. The current BFLP loans appear to be appropriately targeted and are meeting the goal of improving capital access to those with limited financial history. The financial benefits are clear for borrowers, and impacts should expand over time as participants continue in agriculture and more loans are implemented.

Recommendation: The BFLP should be expanded to fund more new farmers and the guidelines should be changed to accommodate people who have farmed but not owned a commercial size farming operation.

7. The Agricultural Processing Loan Program (APLP) is accomplishing the goals of marketing and market development. However, there are only four loans in this part of the portfolio, and all four borrowers stated they could have borrowed the money elsewhere, but they liked the lower interest rates. It is questionable whether these loans are needed in the normal course of agricultural processing. The fourth APLP loan was made to an innovative plant-based pharmaceutical manufacturer. If successful, this investment could result in a large amount of contract production for Kentucky farmers to raise specialty crops. Of the four APLP loans, perhaps this loan is the only one that could result in new markets and greater opportunities that would not have happened without the K AFC.

Recommendation: K AFC should revise loan program guidelines to target new and existing firms needing venture capital for value-added Kentucky agricultural products.

8. The Coordinated Value-Added Assistance Loan Program (CVLP) seems intended to support value chains involving multiple farms producing and selling into specific large markets. This has the potential to directly address the ADB priorities of marketing and market development. However, only one loan has been made in the CVLP, possibly because participation is limited to 25 percent of the total project. A 25 percent participation loan may not reduce the risk enough for participating lenders to fund new proposals for innovative value-added ventures in agriculture. Because Kentucky has so many small farms, this coordinated approach has high potential to help these producers access larger markets and gear production toward specialty niche markets.

Recommendation: Revise loan program guidelines to expand risk reduction and encourage new and innovative ventures. Seek collaborative funding with the ADB Non-Model Program to provide a combination of loan and grant financing, especially for the CVLP.



*This study was funded by the Kentucky
Agricultural Development Board.*

Acronyms

Definition of Terms and Acronyms Used in This Report

ADB—Agricultural Development Board
ADF—Agricultural Development Fund
AFMW—Allied Food Marketers West
AI—Artificial Insemination
AILP—Agricultural Infrastructure Loan Program
APLP—Agricultural Processing Loan Program
BFLP—Beginning Farmer Loan Program
BSE—Breeding Soundness Exam
CES—Cooperative Extension Service
County Councils—County Agricultural Development Councils
CPH-45—Certified Pre-conditioned for Health (feeder calves)
CSA—Community Supported Agriculture
CVALP—Coordinated Value-Added Assistance Loan Program
EPD—Expected Progeny Differences
Extension—The UK Cooperative Extension Service
GOAP—Governor’s Office of Agricultural Policy
GPS—Global Positioning System
K.A.R.E.—Kentucky Agriculture Relief Effort
KBN—Kentucky Beef Network
KDA—Kentucky Department of Agriculture
KAFC—Kentucky Agricultural Finance Corporation
KFBM—UK Kentucky Farm Business Management Program
Menu Approach—A county level program where an approved farm applicant can choose among several model program cost-share offerings
Model Programs—Standardized cost-share programs for farmers offered at the county level
MSA—Master Tobacco Settlement Agreement
Non-Model Projects—Individually applied for grants or loans of ADF funds that do not fall within model program guidelines
PAAC—Purchase Area Aquaculture Cooperative
PVP Cattle—Processed Verified Program
RFID—Radio Frequency Identification
UK—University Of Kentucky
USDA—U.S. Dept. of Agriculture
USDA ERS—U.S. Dept. of Agriculture, Economic Research Service

Background

The Master Settlement Agreement

On November 23, 1998 the Kentucky Attorney General and other Attorneys General of 46 states, five U.S. territories and the District of Columbia reached an agreement with the four largest tobacco manufacturers (Brown & Williamson Tobacco Corporation, Lorillard Tobacco Company, Philip Morris Incorporated, R.J. Reynolds Tobacco Company), ending a four-year legal battle between the states and the tobacco industry that began in 1994. This agreement is known as the Master Settlement Agreement, or the MSA.

As a part of the MSA, the 46 states involved were awarded an estimated \$206 billion to be disbursed to the states beginning in 2000. Since the agreement did not dictate how states should spend the funds awarded in the settlement, it was incumbent upon each state legislature to decide how the funds would be used.

The Kentucky General Assembly passed legislation in 2000 which established how Kentucky's MSA funds would be allocated in the Commonwealth: 25% to be invested in early childhood development programs, 25% to be spent on tobacco cessation and research programs, and the remaining 50% to be devoted to agriculture. Subsequently, the General Assembly passed HB 611 which created the Agricultural Development Board to oversee investing the funds from the MSA.

Establishing Legislation

The General Assembly, with strong support from the Governor's Office, voted to invest 50% of Kentucky's MSA funds in the Rural Development Fund (KRS 248.655) also known as the Agricultural Development Fund (ADF). In an effort to ensure that tobacco dependent counties received a direct impact from the ADF, 35% of the ADF was allocated specifically to counties for county-level projects. One hundred and eighteen of Kentucky's one hundred and twenty counties receive a portion of the 35% county allocation. The specific funding level of a county is dependent upon its relative tobacco-production dependency to other counties in the state which is defined in KRS 248.703 (3).

The remaining 65% of the ADF is allocated for statewide projects, which includes several line item appropriations made each budget session by the Legislature. The funds remaining, after the line item appropriations have been taken out of the state funds, create the state grant pool used for statewide infrastructure investments in agriculture.

The Kentucky Agricultural Development Board (ADB) was established in KRS 248.707, as the entity that would administer the ADF. The Board serves to distribute both the county and state grant pool money in the ADF for the purpose of diversifying Kentucky's agricultural economy. This statute also identified the Governor's Office of Agricultural Policy (GOAP) as the entity that would provide administrative duties for the Kentucky ADB including all accounting, financial and grant transactions, research and policy recommendations.

Along with the establishment of an ADB, the Legislature identified the need for local, grassroots leadership in this historic investment; therefore, in KRS 248.721 County Councils were

established. These 8-member local county councils were created to provide local oversight to evaluate the needs of the local agricultural economy and devise a plan that would identify programs best suited for county agricultural development. They are to assist applicants in obtaining money from the ADF.

The Agricultural Development Board and Initial Policies

Governor Paul Patton appointed the first Agricultural Development Board in July 2000. With only the language in the statutes to guide them the Board and the staff of GOAP began working on developing the Board policies and procedures to administer and award the ADF. The initial meetings were focused on reviewing the legislation establishing the ADF and ADB, while structuring the initial development of the board. The ADB also reviewed and recommended a framework to assist the local county councils in developing their councils.

In September 2000, the ADB held a two-day meeting in Bowling Green and heard presentations from agricultural groups across the Commonwealth. At this meeting Governor Paul Patton presented the guiding principles he drafted for the Board to consider, and the Board adopted the principles. These principles set the tone and course of action for the Board for the following months and years. The ADB worked with a facilitator and GOAP staff to write the investment philosophy statement, and begin working on the Near-term Plan.

Also during this time, County Councils were required by statute to “devise a plan for the county that would identify programs best suited for the agricultural development of the county” (KRS 248.721). County Councils were encouraged to conduct planning meetings to create their county comprehensive plan for agriculture. GOAP staff served as an intermediary between the ADB and the 120 county councils, working with the counties in the development of the county plans, which were ultimately approved by the ADB.

The Near-term Investments

In December 2000, the ADB approved their Near-term Plan for Kentucky agriculture. In the plan they established general investment strategies and certain criteria for the near-term investment of the Agricultural Development Fund. The three general investment strategies that emerged from the Board’s deliberations and interactions with commodity and farm groups during this development process are:

- **Building the competitiveness of current selected agricultural sectors** that are already major or growing sectors of the current agricultural economy in Kentucky.
- **Support the development of new and emerging farm-based opportunities.** This area includes enterprise diversification efforts, related market development, technology development, entrepreneurial initiatives, and new cooperative ventures.
- **Develop local value-added processing of Kentucky agricultural products**—This includes helping producers explore the means to participate more directly in some of the value-adding activities.

The ADB also developed investment criteria, in an effort to provide some guidance and coordination of investment proposals that would come from different groups. The criteria were developed in keeping with the economic development objectives laid out in HB 611, with the goal of establishing broad categories from which near-term investments are most likely to achieve the HB 611 intended objectives. The criteria for prioritizing investments were:

- **Number of farmers involved**—investments that benefit more farmers will receive priority over more narrowly targeted projects. The level of investment required should be proportional to the number of producers benefiting or potentially benefiting.
- **Impact on net farm income**— investments that can demonstrate a high potential for directly increasing net farm income will receive priority. Projects that can lead to sustainable higher incomes for farmers are especially desired.
- **Impact on tobacco dependent communities**— HB 611 focuses considerable attention on developing projects that can help tobacco farmers and communities dependent on tobacco income to develop additional enterprises.
- **Potential for clustered activity**— given limited resources and the need to ensure success of state-wide programs, the Agricultural Development Board is especially interested in projects that can be developed on a pilot basis in a geographic area and then expanded as impacts from the pilot investment become more certain. Such projects will ideally be initially developed in areas that exhibit the greatest chance for success.
- **Time Frame**— investments with long periods before generating positive returns or involve greater risk need to generate relatively greater benefits to offset the deferred or riskier payoffs.
- **Growth potential**— investments that can demonstrate relatively higher growth potential, both in terms of return per producers and in terms of number of producers benefiting, will be more aggressively pursued. Projects may need to take into account a longer planning range to demonstrate when and how significant growth may occur.

With these strategies and criteria the ADB recognized that implicit in the support of each of these areas is the assembly of appropriate technical support, developing grower and business leadership, and expanding the institutional support necessary to ensure sustainable benefits to the agricultural community and Kentucky. As such, the GOAP staff began working with the Universities, the Small Business Development Centers, and other organizations to provide the support that would be needed by producers, organizations, and businesses to produce competitive and viable proposals.

The Application Process

The Near-term Plan also established the implementation responsibilities of the staff, ADB, and County Councils for the grant application process. The plan established that the Board will distribute application forms and conduct an aggressive communications campaign to ensure the highest possible level of public awareness of the availability of opportunities from the Agricultural Development Fund. The agricultural development councils located in each county shall be responsible for raising public awareness of this plan in their communities. The councils shall also work with area farmers to clarify their understanding of the application and evaluation process and provide direction when needed on the development of project proposals.

In January 2001, ADF grant applications were distributed across the Commonwealth. The application focused heavily on the criteria outlined in the Near-term Plan, with a focus on business plan and development. This standard application form was utilized by all applicants, regardless of size or ownership status.

By intention and design, the UK Cooperative Extension Service has played a significant role in the implementation and support of the programs administered by the ADB. County Extension Agents for Agriculture and Natural Resources have performed many duties aimed at assisting producers with the ADF application forms, organizing County Councils, and information dissemination. In many cases, County Agents have served a role similar to an executive secretary or administrator by assisting in the functions of county councils, organizing meetings, working directly with producers, and handling paperwork. Agents have worked with the councils to develop comprehensive plans by supplying statistical data and providing clerical assistance and have provided various forms of assistance to county program administrators. Agents have provided feedback to the ADB regarding the function of programs and provide opportunities for producers to comply with required training. Contributions of county agents were especially important to the most rural participants, e.g. directly with producers to provide them with necessary forms, information, and assistance with paperwork required for the various county programs. UK Extension faculty and specialists were also involved from the inception of the ADF, providing science-based information to the GOAP regarding program specifics and training for producers involved in the various programs.

County Councils were given the responsibility of ensuring that all proposals for county funds receive appropriate evaluation, using the County Plans as an investment guide. The ADB and GOAP staff received and evaluated all proposals for state funds. Yet, the ADB maintained ultimate authority and accountability for the use of both state and county funds, which meant that all county investments had to also be reviewed and approved by the ADB. In early 2001, the staff and ADB began receiving and reviewing a wide array of applications from individuals and organizations across the Commonwealth.

The County Model Programs

As staff reviewed the applications in early 2001, they began to identify a trend in several county level applications. These applications were requesting funds for improvements on individual farms.

In an effort to accommodate county councils that identified these on-farm improvements as essential to agricultural development, the GOAP – along with staff from the Kentucky Department of Agriculture, UK College of Agriculture, industry organizations, and local councils – worked to develop Model Programs.

Model programs were designed to improve the efficiency and decrease the bureaucracy of funding county-level projects for individual on-farm improvements with county funds. These programs had a secondary benefit of empowering local organizations to become leaders by administering the programs.

Also, in response to a need of consistency and funding standards across the counties, the ADB chose to set state guidelines and eligible investment items within the model programs. All the

model programs were designed to provide 50% of the cost of the project to the qualified program participants.

The first model program introduced and funded in March 2001 was the Cattle Genetics Improvement program. This program, like all the model programs, came from a local county application and was developed into a statewide initiative. Since the creation of this first model program, staff has worked with agricultural organizations across the Commonwealth to develop additional model programs originating from requests from the counties. County councils and farmers continue to find the various model programs extremely popular and an excellent method to get funds in the hands of farmers.

Project Analysis by the GOAP Staff

Since the beginning of the application process, the GOAP staff has been closely involved with project analysis and communication from the moment an application enters the office, until the final report is submitted by an award recipient. In the beginning, as an application arrived in the office, it was assigned to a staffer. Eventually Project Analyst (PA) positions were created to serve as a liaison between the County Councils and the GOAP, plus serve as a liaison between the applicant and the ADB.

PAs play a critical role in the project evaluation process. They meet each week to review, in detail, projects under consideration for the upcoming ADB meeting. PAs review project applications and work with the applicant to ensure that the business plan, financial information and other issues related to the proposed project are addressed. They provide an analysis of applications to the ADB and answer members' questions. Plus, they work with the GOAP attorney to develop the terms and conditions under which the project would be funded.

The First Funding

In March 2001, the first projects were approved for funding by the ADB. The state level projects receiving funds in this first approval were cooperative-based organizations, such as Western Kentucky Growers Cooperative, that had a large farmer membership. The county level projects approved included a mix of educational based initiatives, local county farm organizations, and entities that had submitted requests that fit into the Cattle Genetics model program. The projects funded in that first month set a precedent for the type of projects to be approved in the ADF's early years.

Long Term Planning

During the establishment of the application process and the review of early applications, GOAP continued to move forward with developing a long-term plan. With a foundation of the Near-term Plan and the county plans, GOAP staff began the monumental task of creating a long-term plan for Kentucky agriculture. Staff conducted 14 regional meetings across the state and a two-day summit involving over 700 agricultural and policy leaders from around the state and nation

including: farmers, religious and civic leaders, educators, business people, and medical professionals. Participants in these sessions were encouraged to think across county lines, while identifying the most important issues related to long-term agricultural economic development in their regions.

GOAP Staff took the 120 county plans and the notes from the sessions and compiled a draft in the Fall of 2001. GOAP conducted another series of regional meetings to share the draft with the people who would be most directly impacted by the implementation of this plan. As a result of these feedback forums, the plan was modified. After 18 months in the making, Cultivating Rural Prosperity: Kentucky's Long-Term Plan for Agriculture was approved by the Agricultural Development Board in January 2002 and introduced to the public in March 2002. The plan addresses areas of investment concentration and activities to be successfully completed under the guidance of the ADB.

Cultivating Rural Prosperity identifies marketing and market development as Kentucky's number one priority. Therefore the ADB, in February 2002, committed 50% of the biennium's remaining state funds to this effort. The second priority identified in the Plan was access to capital. To move this initiative forward, the ADB passed a resolution in January 2002 supporting the re-activation of the Kentucky Agricultural Finance Corporation (KAFC) for the dual purpose of expanding farmer access to capital and focusing on value-added processing projects. The other priorities identified in the Long-term Plan include:

- Providing financial incentives for sound environmental practices,
- Improving educational opportunities for farm families,
- Committing to the further development of local leadership, and
- Expanding Kentucky's agricultural research and development capacity

This plan was recognized as the first plan in Kentucky's history where local agricultural development councils in every county of the Commonwealth facilitated public discussions about the future of agriculture in their communities.

Oversight Committee

In KRS 248.723, a permanent subcommittee of the Legislative Research Commission to be known as the Tobacco Settlement Agreement Fund Oversight Committee (TSAFOC) was established. This twelve member committee, consisting of six House members and six Senate members, was established to review the monthly funding decisions made by the ADB during the previous month's meeting. In reviewing the projects, the subcommittee is directed to determine whether the criteria or requirements of House Bill 611 are met and whether any other requirements have been met. If the subcommittee determines that any of the criteria have not been met, then the subcommittee may, by majority vote, recommend to the ADB in writing that a project not be approved. If the subcommittee determines that all relevant criteria are met by any proposal, then they may, by majority vote, recommend to the ADB in writing that the project be approved.

The first meeting of the TSAFOC was not held until May of 2003, due to the Senate's delay in appointing members to the committee. By that time the guiding principles, investment policy,

application process, long-term plan, county model programs, and over two years of projects had been approved by the ADB.

The Annual Review

When the ADB approved the Long-term Plan in January of 2002 they recognized that the plan was a living document that should continue to be evaluated by the ADB to assess its applicability. As such in October 2003, the ADB conducted the first annual planning session to assess the application process and investment decisions made since the first grant was funded in March 2001. At this meeting ADB members suggested various recommendations for change of their application review process that would help in their due diligence of important investment decisions and better fund management. This annual evaluation of funded projects, programs, and investment focus continues today.

Evaluation Methodology

Evaluation Design

As agreed in discussions with ADB members and GOAP staff, the overall goal of this evaluation is to assess the effectiveness of the ADB investments in agriculture, agribusiness, and leadership development over 2001-2006 by systematically examining outcomes and impacts of selected activities: State Non-Model Projects, County Non-Model and Model Programs, and the Kentucky Agricultural Finance Corporation.

The ADB's stated overall goal is presented on the GOAP webpage:

The Board will invest these funds in innovative proposals that increase net farm income and effect tobacco farmers, tobacco-impacted communities and agriculture across the state by stimulating markets for Kentucky agricultural products, finding new ways to add value to Kentucky agricultural products, and exploring new opportunities for Kentucky farms.

Overall effectiveness is evaluated in this study relative to this general goal plus specific goals related to Non-Model Projects, the Model Program funding, and the funds transferred to the KAFC. The evaluation criteria for each of these are outlined in the major sections of this report.

In addition, the ADB and GOAP staff also requested that the evaluation examine four key questions relative to the impact of the ADB investments:

1. Where would Kentucky's agriculture be without the ADB investments?
2. What have been the quantitative and qualitative impacts of ADB expenditures?
3. How have ADB investments leveraged other resources?
4. How have ADB programs affected county leadership and entrepreneurial leadership?

To conduct this evaluation, UK proposed a collaborative approach in which the staff of GOAP and members of the ADB will be involved with the UK Team in providing data and information, adapting a LOGIC model to fit the unique set of investments being examined (Non-Model, Model, or KAFIC loans), and participating in site visits and interviews. The UK Team took responsibility for the data collection, the general survey instruments, site visits and interviews, expert group consultations, and the impact analysis. To assist in analyzing impacts and consequences, the UK Team sought assistance from other UK faculty, County Agents for Agriculture and Natural Resources, consultants, and other individuals with experience or expertise in specific areas. However, all judgments and conclusions are the responsibility of the UK Team.

LOGIC Model Framework

To guide the overall evaluation effort, the UK Team developed a modified Logic model (summarized below) to provide the framework for linking the overall investment goal to the project investments (the inputs) and, logically, to the outputs and impacts.

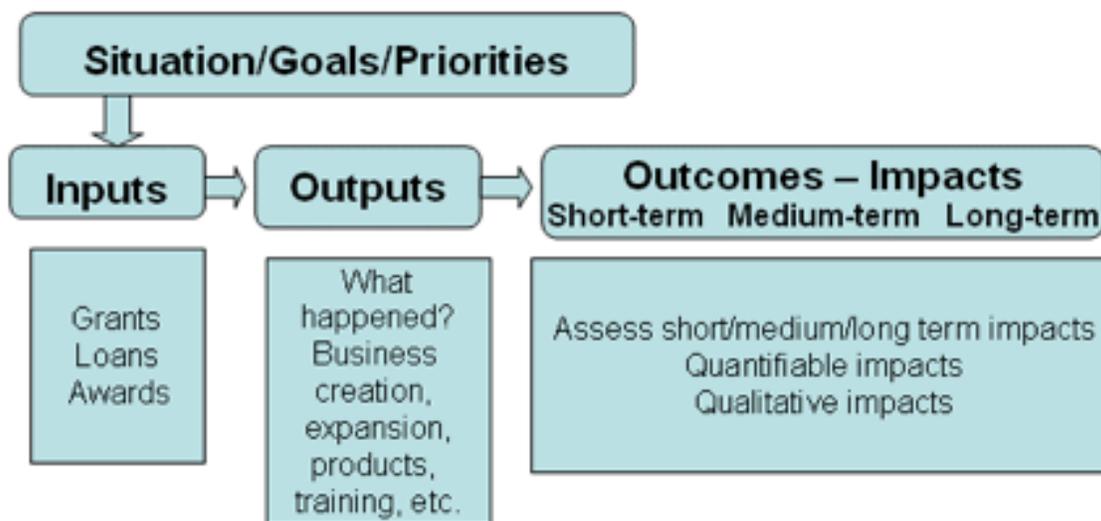


Figure 1: LOGIC Model.

Since ADB investments began in 2001, it was anticipated that most of the impacts would be short and medium-term. However, judgments were rendered in cases where potential for long-term impacts seemed likely.

The evaluation was initiated by focusing on the large and medium investments in the Non-Model Program, which represent a majority of the invested funds but a fraction of the total number of projects. The UK Team identified a stratified, representative sample of the “small” category investments and the county non-model investments to analyze the numerous smaller non-model projects.

Evaluation of the County Model Programs was directed by the Assistant Extension Director for Agriculture and Natural Resources in the UK College of Agriculture.

The UK Team approached the evaluation of the loans implemented by the KAFC with ADB funding using the same basic conceptual approach as with the Non-Model Program. A stratified sample of the KAFC loan portfolio was identified for all agricultural infrastructure and Beginning Farmer loans. In addition, the UK Team visited all three Coordinated Value-Added loan recipients and the single Agricultural Processing loan.

Part I: The Non-Model Program Investments

Data Collection

The GOAP requires quarterly and semi-annual fiscal reports for each non-model project. These reports generally track flow-of-funds with minimal reporting on goal achievement or impacts. Annual programmatic reports require project managers to provide a brief status report on goals and objectives, estimate the percentage of project completion to date, scope of project (i.e. number of farmers, counties, and youth impacted to date as well as total sales, net profit, etc.), a listing of which terms have been achieved and how they were achieved, and statement of any revisions or lessons learned. These reports are sent electronically to the GOAP's project compliance specialist. If the project manager or contact person fails to do this, the compliance specialist will contact them, in writing, requesting the necessary reporting information. Reporting must be in compliance in order for the project to receive or continue to receive funds.

Once the compliance specialist receives a project's report, the data are reviewed for compliance with terms and agreements of the specific project and then the data are entered into the GOAP's reporting database. If the project is not meeting compliance requirements, the compliance specialist contacts the project's manager or contact person to discuss the problem issues and advise for improvements. Finally, all hard copies of reporting data are filed in the specific project's folder at the GOAP office. All reporting is done by the project owners or management administration. The report is accepted as submitted. Information in the report is only verified by the GOAP if a discrepancy is apparent.

An Evaluation Team student intern was placed in the GOAP during the summer of 2007. During this time she collected data and information from GOAP files for non-model projects funded during 2001-2006. This information consisted of comprehensive lists of all state and county non-model projects funded, individual project documentation on all medium and large projects, as well as application and monitoring process information. Background folders were created for each large and medium project from these files. The folders contain the project application, agreement, request for disbursement of funds, terms and conditions, county prioritizations forms, any reports (i.e. programmatic updates, annual or quarterly reports, and forgiveness details submitted to the GOAP), as well as any other documents relevant for the evaluation team to better understand a project.

The data collection effort revealed that most project files were incomplete and only meeting minimal reporting efforts. Quarterly fiscal reports were documenting flow-of-funds but there were few serious attempts to actually document achievements, other than completion of construction or installation of new equipment. It was clear that an effective evaluation would require additional information collected through surveys and site visits.

Evaluation Criteria for Non-Model Investments

The UK Evaluation Team examined the ADB's investment philosophy, Long-Term Plan Priorities, and Guiding Principles to identify the essential criteria for measuring performance of the Non-Model Projects. The ADB's investment philosophy contains the overall goals for fund investments:

“The Kentucky Agricultural Development Board will invest monies from the Kentucky Agricultural Development Fund in innovative proposals that increase net farm income and effect tobacco farmers, tobacco-impacted communities, and agriculture across the state through stimulating markets for Kentucky agricultural products, finding new ways to add value to Kentucky agricultural products, and exploring new opportunities for Kentucky farms and farm products.”

Four of the ADB's Long-Term Plan Priorities appear to apply directly to the investments in Non-Model Projects:

- Priority #1– Marketing and Market Development
- Priority #4– Farm Family Education and Computer Literacy
- Priority #5– Supporting Local Leadership
- Priority #6– Research and Development

Therefore, the evaluation criteria for the Non-Model investments were focused on attempting to measure the performance of the funded projects in contributing to the attainment of the overall investment philosophy and the four priority goals. In each site visit and interview, participants were not only asked whether their project met its stated goals but also specifically asked to read the investment philosophy and indicate whether or not the ADB's use of funds was consistent with this philosophy. Detailed impact questions were included in the questionnaire to assess outcome and impacts of projects, including quantitative measurements, where possible. Although the Non-Model investments are a heterogeneous group of projects, all participants were asked to identify and explain the nature and extent of the following possible impacts of their project:

Created a new market for KY agriculture products
Provided support for agricultural entrepreneurship
Increase net farm income
Developed new products

Added value to KY agriculture products
Expanded an existing market for KY agriculture products
Enhance an existing farm enterprise
Created new jobs in the economy
Enhanced the viability of young farmers
Enhanced the viability of part-time farmers
Helped tobacco farmers
Helped tobacco-impacted communities

Based on data in the project files, information from the site visits and survey questionnaire, and analysis from Expert Groups, the performance of the Non-Model investments is measured and reported in this evaluation in three separate dimensions: (1) New Markets or Expansion of Existing Markets, New Products, New Jobs, Farm Income Generation, Leveraged Resources, Entrepreneurial and Leadership Development, Education and Computer Literacy, Youth, and Tobacco Farmers; (2) Ranking of all Large and Medium Non-Model Projects based on achievement of goals and documented impacts to-date; and (3) Estimated impacts on key sectors of Kentucky's agricultural economy (Livestock, Horticulture, Value-added Processing, Marketing and Promotion, Education and Leadership).

Survey Questionnaire

A survey was developed by team members to gather information from project fund recipients regarding their project's activities and results. The survey questionnaire included several sections about the project and participation with the agricultural development fund. Survey sections included background information about the project and project objectives, qualitative information about the Agricultural Development Board investment philosophy and investment priorities, specific contributions to expected impacts of the project, and opinions about the agricultural development proposal process and the role of Agricultural Development Funds in carrying out the project.

The survey was tested in the initial interviews, and minor modifications were made to make it consistent with the information needed to assess the projects. The use of the survey form allowed the interviewers to collect the same information from all of the fund recipients, and standardize the interview process for all projects. The survey is included in the appendix.

Information was collected regarding specific results and impacts achieved by each project in a separate impacts table. The impacts table summarized specific project impacts and when combined, was used to estimate the total impacts of all of the ADF investments. Additional documentation of results and impacts was also collected if it was available from the individual projects.

Site Visits and Interviews

A total of 89 personal interviews were conducted with recipients of ADF non-model project funds including all 33 medium (\$100,000 - \$499,000) and 31 large (\$500,000 and over) projects that

were awarded state funds from 2001 - 2006. Interviews were conducted on site, using the standard survey form. The interviews of large and medium projects were conducted during the summer of 2007 by the UK Evaluation Team. Small project site visits and interviews and County Council interviews were conducted in 2008.

Conducting the interviews on site provided several advantages for the evaluation. The interviews were conducted in a familiar setting for the award recipients. In most cases, the UK Evaluation Team participants were able to see first hand the nature of the project activities. This approach also minimized the time that the respondents had to give for the interview due to not having to travel. Visiting all of the large and medium non-model projects and a sample of the small non-model project provided the evaluation team members with first hand knowledge of the nature of the Agricultural Development Fund projects.

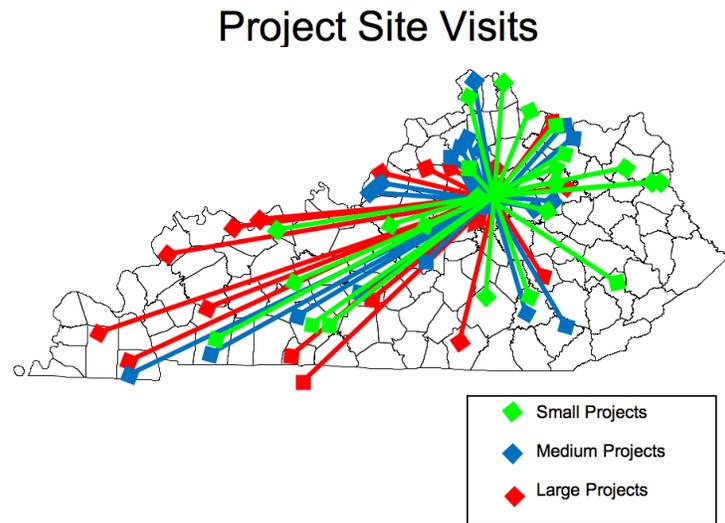


Figure 2: Large, medium, and small non-model project site visits.

Survey Briefs and Impact Data

After each survey visit, a detailed survey project brief was compiled for the project. This brief included the amount and type of the Agricultural Development Funds received, a description of the project, the project goals as stated on the project proposal, how the project addressed the four key questions of the evaluation effort, and what supporting documents were received regarding project operations and impacts ¹.

¹Copies of abbreviated survey project briefs are attached in Appendix B.

Survey Results

Survey Response Summary

Respondents were asked to review the statement of investment philosophy of the Agriculture Development Board and were asked if they agreed that the ADB's use of funds has been consistent with this philosophy. Over 70% strongly agreed that the use of funds is consistent with the investment philosophy.

Table 1: *Responses to: "Based on my experience, the Ag Development Board's use of funds is consistent with the Board investment philosophy."*

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Strongly Agree	81%	82%	48%	72%
Agree	13%	12%	40%	20%
Disagree	3%	3%	12%	6%
Strongly Disagree	3%	0%	0%	1%
N/A	0%	3%	0%	1%
Total	100%	100%	100%	100%

Six major priorities were identified by the Agricultural Development Board for project funding. Respondents were asked which of the main priorities does their project addresses. Three fourths of respondents (75% overall; 77% large, 61% medium and 92% of the small non-model projects sampled) identified marketing and market development as the main priority. Secondary priorities that the projects contributed to were research and development (30%), farm family education and computer literacy (34%), supporting local leadership (22%), improving access to capital (13%), and financial incentives for environmental stewardship (9%).

The ADB had also outlined several potential impacts that ADF projects might have. Project recipients were asked which of these potential impacts applied to their project. Most common impacts reported were: increased net farm income for local farmers (93%), provided support for agricultural entrepreneurship (83%), added value to Kentucky agricultural products (82%), and enhanced the viability of part-time farmers (81%). For each of the impacts that respondents indicated the UK Evaluation Team asked for more detailed information. Frequently projects had impacts recorded under several categories. Many of the projects did not have specific numbers for their impacts and many lacked documentation for impacts.

Respondents were asked about the status of meeting the project goals and objectives that were outlined in their agricultural development proposals. According to recipients, 48% of the large projects, 33% of the medium projects and 72% of the small non-model projects sampled have met all of their goals and objectives, while 48% of the large projects, 64% of the medium projects and 28% of the small non-model sampled have met some of their goals and objectives.

Table 2: Responses to: “The ADB has six major priorities or goals. Which of these is the main priority or goal that your project contributes to?”

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Marketing and market development	77%	61%	92%	75%
Improving access to capital	7%	12%	4%	9%
Financial incentives for environmental stewardship	0%	3%	0%	1%
Farm family education and computer literacy	10%	9%	4%	8%
Supporting local leadership	3%	3%	0%	2%
Research and development	3%	9%	0%	4%
N/A	0%	3%	0%	1%
Total	100%	100%	100%	100%

Table 3: Responses to: “Please identify which outcomes and impacts apply to your organization.”

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Increased net farm income for local farmers	97%	85%	100%	93%
Provided support for agricultural entrepreneurship	90%	82%	76%	83%
Added value to KY agriculture products	94%	67%	88%	82%
Enhanced an existing farm enterprise	84%	79%	84%	82%
Enhanced the viability of part-time farmers	81%	82%	80%	81%
Expanded an existing market for KY ag products	84%	67%	84%	78%
Created a new market for KY agriculture products	74%	64%	84%	73%
Created new jobs in the local economy	84%	70%	64%	73%
Enhanced the viability of young farmers	74%	76%	60%	71%
Developed a new agriculture related business	71%	64%	68%	67%
Developed new products	77%	48%	48%	58%
Supported local leadership development	61%	52%	52%	55%
Conducted new ag research and development	71%	58%	24%	53%
Made loans or grants to farmers	45%	12%	4%	21%
Increased farmer computer literacy	35%	12%	8%	19%

Respondents overwhelmingly felt that their projects have helped tobacco farmers and tobacco impacted communities (98% overall). Most project recipients also indicated that their projects had affected farm youth, although few of the projects had a specific youth component. Most of the impact on youth was related to impacts educational efforts and youth oriented organizations such as FFA, 4-H and vocational agriculture classes.

Table 4: *Responses to: “Have you met some or all of your goals and objectives outlined in your ADF proposal?”*

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Yes	97%	97%	100%	98%
No	3%	3%	0%	2%
Total	100%	100%	100%	100%
All	48%	33%	72%	50%
Some	48%	64%	28%	48%
None	4%	3%	0%	2%
Total	100%	100%	100%	100%

Table 5: *Percent of yes responses to: “Has this project helped tobacco farmers, and tobacco impacted communities?”*

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Tobacco farmers	100%	94%	100%	98%
Tobacco impacted communities	100%	94%	100%	98%

Table 6: *Responses to: “How many farm youth are affected by this project?”*

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
0	0%	9%	0%	3%
1 to 10	3%	24%	36%	20%
11 to 25	14%	7%	24%	14%
26 to 50	3%	9%	4%	6%
51 to 100	10%	6%	8%	8%
More	35%	15%	12%	21%
N/A	35%	30%	16%	28%
Total	100%	100%	100%	100%

Some of the project recipients received outside technical assistance at some stage of their project development or implementation. Slightly less than half of all of the projects received assistance with proposal preparation (32% of large, 55% of medium, 48% of small sample). During initial project implementation, most common types of outside technical assistance were in the areas

of financial planning and marketing. Almost half the large and medium sized projects responded that outside help was enough, while only one-quarter of the small projects felt they had enough help during the project implementation phase. (Table 7)

Table 7: *Responses to: “What type of outside assistance did you receive during the initial implementation of your project?”*

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Preparing proposal	32%	55%	48%	45%
Initial implementation	35%	52%	24%	38%
Financial planning	45%	18%	12%	26%
Marketing	32%	42%	12%	30%
Crop or livestock production	35%	27%	20%	28%
Processing	29%	21%	24%	25%
Product development	26%	15%	8%	17%
Leadership development	42%	3%	12%	19%
Other	26%	12%	16%	18%

Respondents were also asked a series of opinion questions about Kentucky’s use of the Agricultural Development Funds and the process of implementing their projects. (For the responses to all of the opinion questions, see following tables.) Ninety-one percent of those interviewed either agreed or strongly agreed that the agricultural development fund money was a critical component to starting the projects. Eighty-six percent agreed or strongly agreed that the business or project would be able to continue after the agricultural development fund money has ended. With regard to the agricultural development funds in Kentucky, 98% of those interviewed agreed or strongly agreed that the Agricultural Development Fund investments have benefited Kentucky and 96% agreed that the agricultural development fund investments have been an effective use of tobacco settlement (Master Settlement Agreement) funds.

Table 8: *Responses to: “The ADF money was a critical component to starting this project.”*

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Strongly Agree	81%	79%	64%	75%
Agree	13%	18%	16%	16%
Disagree	3%	3%	12%	6%
Strongly Disagree	3%	0%	8%	3%
N/A	0%	0%	0%	0%
Total	100%	100%	100%	100%

Table 9: *Responses to: “My business or project will be able to continue after the ADF money has ended.”*

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Strongly Agree	69%	64%	60%	65%
Agree	16%	24%	28%	22%
Disagree	6%	9%	4%	7%
Strongly Disagree	6%	3%	4%	4%
N/A	3%	0%	4%	2%
Total	100%	100%	100%	100%

Table 10: *Responses to: “The ADF investments have benefited Kentucky.”*

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Strongly Agree	81%	82%	72%	79%
Agree	19%	12%	28%	19%
Disagree	0%	0%	0%	0%
Strongly Disagree	0%	0%	0%	0%
N/A	0%	6%	0%	2%
Total	100%	100%	100%	100%

Table 11: *Responses to: “The ADF investments have been an effective use of tobacco settlement (MSA) funds.”*

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Strongly Agree	65%	70%	60%	65%
Agree	35%	24%	36%	32%
Disagree	0%	0%	4%	1%
Strongly Disagree	0%	0%	0%	0%
N/A	0%	6%	0%	2%
Total	100%	100%	100%	100%

Analysis of Impacts from Non-Model Investments

This evaluation focuses upon the outcomes and impacts of the Agricultural Development Fund projects. The UK Team specifically avoided the use of the term “successful” or “unsuccessful” to describe projects because of the subjective nature of the term. Most projects in the study had positive outcomes. Most projects in the study also achieved at least some of the objectives of their project proposals. Some projects did not maintain all of their outcomes in the long term. However, one must also consider that the nature of the Agricultural Development Fund and its funding goals included projects that were innovative, new to Kentucky, and often were accompanied by some risk in achieving the project objectives.

Thus, even for projects that did not achieve all of their objectives or did not continue to operate in the long term, there were still lessons learned and often many positive indirect outcomes. Some of the projects to form cooperatives are examples of this. Most of the co-ops that were funded are no longer operational. However, much was learned about how co-ops can and cannot function in Kentucky. Farmers continue to produce and sell many new products that otherwise they would not have, if the co-op projects had not been implemented. Therefore, rather than labeling individual projects in this evaluation as successful or unsuccessful, we leave it to the readers to determine whether in total the Agricultural Development Fund programs have been successful or not.

Expert Groups

To assist in analyzing major impacts of the Non-Model investments, the UK Team assembled five different groups of well-informed individuals who could potentially evaluate the consequences of the Non-Model investments. There were five different expert groups, focused on Horticulture, Grains, Cooperatives, Livestock, and Marketing and Promotion. Approximately ten to fifteen experts in each area were invited to attend the meetings. These experts included academic specialists in each field, industry professionals, Farm Bureau members, and relevant organization’s representatives. Some experts are affiliated with ADB funded projects and some are not. The complete list of attendees at each expert meeting is included in Appendix C.

The objective of these meetings was to help answer the key question: “Where would Kentucky Agriculture be without the ADF investments?” Each group was asked to examine the summary brief compiled for each project and the indicated impacts. Discussions at each meeting focused on the impacts on the industry by all related projects. Projects were categorized by agriculture sectors. Some projects were discussed at more than one meeting if they fell into more than one category.

Each expert meeting began with a short introduction of the team members and invited experts and an overview of the team’s work to date. The experts were then given packets to review with briefs on all projects to be discussed. After the participants had time to review the information, a short presentation about the industry trends was then given. Following this presentation, a discussion of the projects and their impacts on the industry began and continued for the duration of the meeting.

The Horticulture expert meeting took place on November 9, 2007. Fourteen experts were present to discuss twelve projects totaling \$23,629,836. All the people present felt that the ADF investments have had positive impacts on the Horticulture industry. In fact one suggested that more than half of the growth in the Horticulture industry could be attributed to ADF investments. Most also felt that the majority of these impacts could not have happened without the ADF investments. ADF investments in Horticulture were successful because they focused on three key areas - education, infrastructure, and marketing and promotion. The group agreed that the Horticulture Council and the Grape & Wine Council have produced great impacts on the industry from their ADF money. Many also felt that although most of the cooperatives have dissolved, they had positive impacts because many of the former members individually continue to grow produce and nursery crops. Cash receipts for produce farm marketings were noted to have increased 70% during the ADF funding period (2001–2006).

The Grains expert meeting took place on November 20, 2007. Ten experts were present to discuss five projects totaling \$12,954,669. All five projects have had positive impacts on-farm income to varying degrees. Several projects have created new markets in the state as well. The grain related project impact results have been incorporated into the value-added category of projects for this report.

The Cooperatives meeting took place on November 21, 2007. Eleven experts were present to discuss eight projects that totaled \$10,222,743. Although all but two cooperatives have ceased operations, they have had and continue to have positive impacts because many former members are still growing produce, nursery and aquaculture crops on an individual basis. Many in the group felt that the cooperatives were given unattainable expectations and too short a timeframe for success. In some cases the co-ops had poor business plans, and underestimated the importance of sound management. Both of these factors contributed to the co-ops demise. However, the big picture is that the cooperatives have contributed to agriculture diversification away from tobacco. This was accomplished by providing education, technical assistance and marketing support for new growers.

The Livestock meeting took place on November 29, 2007. Nine experts were present to discuss 18 projects totaling \$18,528,073. The livestock projects were discussed by sector; aquaculture, beef, dairy, goat and sheep, horse, pork, and poultry to help facilitate discussion. Most felt that ADF investments in the Livestock industry have been very successful and would not have happened without the investments. The Beef Network in particular has had a very positive impact by providing education, technical assistance and marketing support for beef cattle production. Several of the livestock projects appear to have great potential but are too new to have confirmed impacts.

The Marketing and Promotion meeting took place on December 13, 2007. Ten experts were present to discuss three projects totaling \$10,620,861. Everyone present felt that the Kentucky Proud program has been extremely successful and has had a large and positive impact. Many of these impacts can be seen at the family farm level. Much of these impacts can be attributed to the Kentucky Department of Agriculture and their staff. Allied Food Marketers West has also contributed to the success of the Kentucky Proud program. A major concern for many individual producers was the desire to preserve individual identity of their products within the Kentucky Proud promotion. A similar concern of these producers was the promotion of the Rebekah Grace Company as the primary marketing and logistics solution offered to independent producers. For those businesses wanting to maintain their own product's identity this was not a solution to their

logistics problems. Logistics was mentioned repeatedly as a significant barrier for independent producers trying to service their wholesale and retail customers.

One reoccurring concern at all of the expert meetings was the competing objectives among some projects. For example, the ADB has funded multiple compost, shrimp hatchery, and grain processing projects which have resulted in some negative competitive impacts. Several projects were started in close proximity to an existing and previously funded ADF project that would have to compete for the same customers. Several experts, as well as project participants, felt the ADB should take these cross-competitive impacts into consideration during project feasibility analysis.

Review of Major Specific Impacts

The UK Team devoted specific efforts to documenting the important potential impacts from all the large, medium and small investments. The purpose was to address Key Question #2, “What have been the quantitative and qualitative impacts of the ADB investments?” During site visits and interviews, specific questions were asked and information was collected on the following potential impact categories: New Markets or Expansion of Existing Markets, New Products, New Jobs, Farm Income Generation, Leveraged Resources, Entrepreneurial and Leadership Development, Education and Computer Literacy, Youth, and Tobacco Farmers.

Using survey interview data, site visits, input from the Expert Groups, and other documentation, an attempt was made to quantify the impacts of the Non-Model investments. The large and medium projects were analyzed individually but the UK Team identified a representative sample of the 111 small non-model projects (<\$100,000) for analysis. In order to quantify the potential impacts from all 111 small non-model investments, results from the sample interviews were multiplied by 4.343 in order to extrapolate the estimated impact of small non-model investments.

New and Expanded Markets

New markets created or existing markets that were expanded as a result of the ADF non-model small, medium and large projects were tallied by category and size of the project award. One hundred forty eight markets were created or expanded as a result of the non-model funding (Table 12).

The horticulture sector created the largest number with sixty-one new or expanded markets. The small non-model investments created most of the new horticulture markets. Typically the small non-model projects are individual small businesses such as wineries and roadside markets that also purchase local farm products for their use or sale. The larger horticulture investments tended to involve multiple horticulture producers who market their products together. Examples include three new produce markets; the Buffalo Trace Produce Auction, Bath County Produce Auction and the Southeast Kentucky Agriculture Cooperative. Four wholesale vegetable marketing co-ops were also awarded ADF money for expansion purposes. Jointly the produce co-ops found wholesale markets and shipped fresh produce to customers in 23 states. Two other large projects that had horticulture components were the Kentucky Department of Agriculture Marketing Office and the

Table 12: *Estimated number of markets created by project category and size.*

	New or Expanded Markets			
	Large	Medium	Small	Total
Livestock	5	4	22	31
Horticulture	7	2	52	61
Marketing	18	1	22	41
Value-Added	5	6	4	15
Other	0	0	0	0
Total	35	13	100	148

Kentucky Horticulture Council. Both of these projects developed new markets for Kentucky grown produce and nursery crops.

The marketing and promotion projects created the second most new or expanded markets (41). Most of these are small non-model projects that are individually owned and benefited from promotional efforts that advertise their agri-tourism business. The large non-model projects in the marketing and promotion sector were created to promote Kentucky food and agricultural products to consumers. For example, some of the market development project successes include: an expanded retail market for Kentucky Proud products (Kentucky Proud products in over 100 retail stores), a new market for Kentucky products with Levy Restaurant at Churchill Downs, the promotional work of the Kentucky Grape & Wine Council to expand the markets for Kentucky wine, Kentucky Department of Agriculture (KDA) and Allied Food Marketers West tradeshow promotions both in and out of state to develop new markets for a wide variety of Kentucky agriculture or food products, expanded restaurant markets with the Restaurant Rewards Program, and the expanded markets for locally grown items at farmers' markets through out the state. An exact count of new or expanded markets for each product or outlet utilized is not possible. Obviously the nature of marketing campaigns is to broaden market access and improve sales of existing outlets. There is evidence that this is happening and having a very positive impact.

The livestock sector created thirty-one new or expanded markets for their products. Three new and potentially large markets were created for Kentucky grown livestock; Processed Verified Program (PVP) Cattle (60,000 head of cattle), Little Kentucky Smokehouse making hams and purchasing Kentucky hogs, and the Purchase Area Aquaculture Co-op processing and marketing Kentucky grown catfish. Six livestock markets that involved many different farmers were expanded. The market for Kentucky Feeder Cattle was expanded greatly through CPH-45 sales (516% increase from 2000 to 2006). Other expanded markets include: contract raising of over 6,000 dairy heifers, two aquaculture processing and marketing ventures and two USDA inspected slaughter facilities funded to expand the opportunities to direct market meat.

The value-added processing sector created fifteen new or expanded markets for Kentucky agriculture products. This was generally accomplished by purchasing Kentucky agriculture products and transforming them into new value-added products such as naturally cured hams, ethanol, cider, wine, shelf-stable foods and industrial products.

Forty-four counties had farmers' markets that received non-model ADF funds. Mostly the farmer's market projects were funded with a combination of state small non-model funds and county non-model funds. Farmers' markets have gained popularity nationally and in Kentucky as well. Farmers' markets are widely distributed across the state (Figure 3). At the minimum, a farmers market is a designated place and time where farmers gather and sell their wares directly to the public. Community farmers' markets can be a low cost form of market development for local farmers and consumers. Nineteen farmers' markets used the ADF grant funds to construct permanent pavilions (covered sheds) to provide an all weather location to hold their markets. Other markets used some ADF funds to purchase tent awnings for their vendors to shade their individual sales booths. The remaining ADF grant funds were used to cost-share advertising expenses for the farmers' markets. The UK Evaluation Team conducted a mail survey of KY farmers' markets that received some ADF funds in order to gauge the possible impacts for the funding. Looking at typical farmers' markets in the survey, and using the nine markets that revealed their annual sales figures, an estimated of \$0.84 in annual sales was generated for each ADF dollar received. A complete report on ADF funded farmers' markets is included in the appendix.

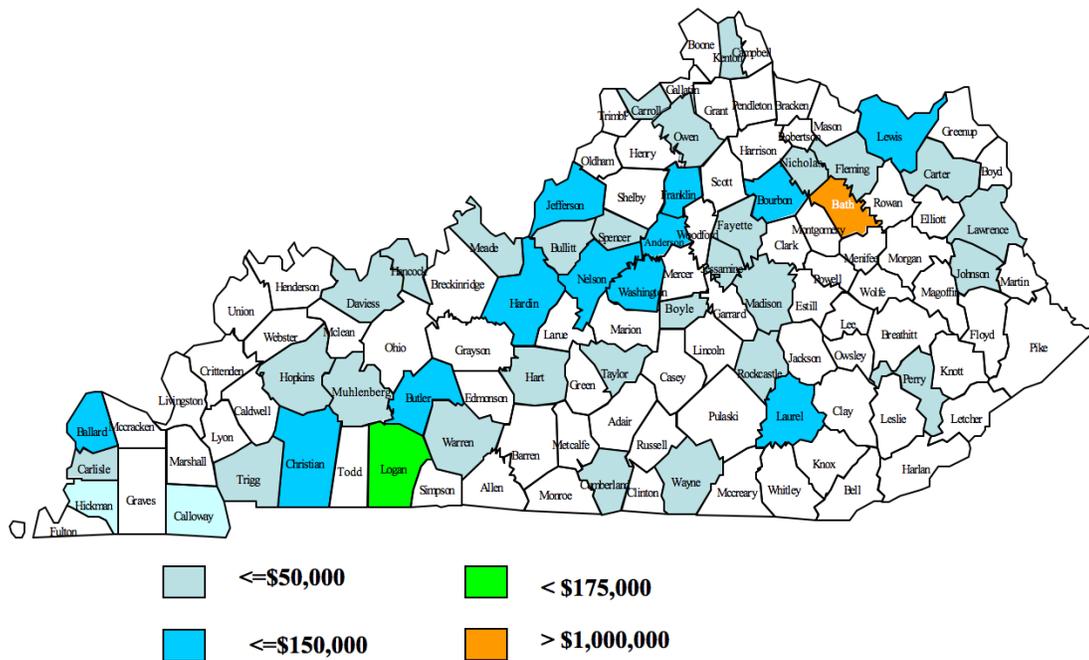


Figure 3: Distribution of ADF Farmers' Market Funding 2001–2006.

Examples of New Markets:

Seimer Milling—new market for low quality wheat to make industrial glue products
 Little Kentucky Smokehouse—new market for Kentucky hogs to make naturally cured hams
 Horticulture Council—New markets developed in northern states for Kentucky nursery crops
 Beef Network—New markets developed for Process Verified Program (PVP) Cattle
 Roundstone Native Seed—New market for native seed production

Examples of Expanded Markets:

Evans Orchard—expanded market for apples to make cider
 Beef Network—Expanded markets for Kentucky feeder cattle with CPH-45 sales
 Boones Abattoir—Expanded market access for direct meat marketing by farmers
 KDA & Allied Food Marketers West—expanded retail markets for Kentucky Proud Products
 Kentucky Forage & Grasslands Council—Expanded market for quality hay

New Products

The ADF funded non-model projects created an estimated 522 new products (Table 13). The different types of products created as a result of ADF investments is wide. This is not surprising given the range of projects that were funded. Only actual new products and new services were counted in the estimate. Projections and plans for new products were not included.

Table 13: *Estimated number of new products by project category and size.*

	Products			
	Large	Medium	Small	Total
Livestock	15	6	30	51
Horticulture	31	40	239	310
Marketing	34	0	0	34
Value-Added	17	5	78	100
Other	11	16	0	27
Total	108	67	347	522

In livestock, new aquaculture products include frozen prawn tails, catfish, hybrid striped bass, Kentucky Spoonfish Caviar, marinated spoonfish fillets, and juvenile prawns for pond stocking. Other products include processing and retailing goat, lamb, buffalo, pork, beef, and rabbit processing, Kentucky smoked hams and ready-to-eat meal products, and poultry chicks and supplies. New services include electronic tagging of beef cattle for age, source, and process verification, milk improvement educational programs and services for Kentucky dairymen.

New products in horticulture include new produce varieties, two compost products, new wines, various value-added apple products, disease resistant and locally adapted queen bees, bee pollination services, starter bee hives, a special decision support system for grape growers, blue-

berries, and blackberries. New products from co-op projects include sorghum suckers and syrup, lettuce packing, personal size watermelons, celery, ornamental and deciduous shade trees.

In marketing, new products include bottled milk, salsa, apple butter, and some Rebekah Grace products. In value-added they include bagged deer corn, ethanol, dried distillers grain, carbon dioxide and crude corn oil for poultry feed, soy oil, soybean meal and soy hull pellets, and new glue products made from wheat.

Examples of New Products:

Seimer Milling—Industrial glue products made from KY wheat
Little KY Smokehouse—Naturally cured hams and fresh meal solutions
Roundstone Native Seed—Native grass and forbs seed
Ale-8-one salsa made with KY grown produce
Katelyn’s Honey—Private label products: salsa, tomato sauces, apple butter, relishes, jams, etc.
Commonwealth Agri-energy—Ethanol, crude corn oil, and distillers grain products
Evans Orchard—Private label apple cider
35 Active KY Wineries—Producing over 60,000 cases of Kentucky made wines
Thoroughbred Shrimp—Aquaculture seed stock: prawns, large bass, striped bass, and tilapia
Four Seasons Marketing—Livestock mineral products
Rebekah Grace—150 Kentucky made food products marketed to retailers
Central KY Growers Co-op—Romaine lettuce
Shrock Dairy—Bottled milk

Finally, new products in the other category include licking blocks, tubs and bagged minerals for livestock, technical assistance for accounting and business development, hydroponic tomatoes, new hay certification, custom vocational agriculture curriculum, new native seed lines, and several other value-added food products.

Farm Income Generation

One of the investment criteria stipulated by the ADB was to affect net farm income in a positive way. Net farm income refers to income after all expenses have been paid. Ultimately a farm business will not be able to survive unless it can generate enough net farm income to reward the owners and operators sufficiently to continue operations. The UK Evaluation Team had no way to winnow out net farm income from each project participant or customer. Instead we attempted to estimate the gross farm income generated by each project on an annual basis. Estimates were derived from sales data collected by the UK Evaluation Team from the projects, GOAP reports on file, expert group sessions and individuals with first hand information. Based on the above information annual farm income generated by the ADF large, medium and small non-model projects is estimated to be \$42.5 million in 2006 (Table 14). As a cross-check, rounding this annual farm income estimate to \$40 million, results in an estimated 1% increase in Kentucky’s current \$4 billion agriculture economy. Intuitively this appears to be an estimate of impact that is plausible given the size of the ADF investments and the extent of the agriculture industry in Kentucky. The small, medium and large non-model projects required an investment of approximately \$86 million over the six year period. The resulting total farm income estimated from these investments amount to

\$161 million dollars over the period of 2001–2007. (Note: Not all projects included in site visits were in operation for the entire period.) This amounts to \$1.87 in farm income generated for every \$1 of ADF money invested in large, medium and small non-model projects.

Looking at the large project investments separately, an investment of \$74.3 million of ADF funds resulted in farm income generation of \$136.4 million or a return of \$1.84 per one dollar of ADF funds spent. The medium non-model projects required an investment of \$7.9 million and returned \$12.2 million in farm income or \$1.55 for every one dollar of ADF funds spent. The small non-model projects received \$4.3 million in funding and are estimated to have generated \$12.8 million in farm income, or \$3.00 for every one dollar of ADF funds invested. Assuming the sample showed representative results for this level of investment, the smaller funded projects generated the most farm income per dollar invested from the ADF. The small non-model survey results do indicate that small non-model projects are effective in generating farm income at a greater rate than most of the large or medium projects combined.

The largest farm income generator was the livestock sector of ADF investments, estimated to be approximately \$18 million per year. The Kentucky Beef Network and the Kentucky Cattlemen's Association projects are estimated to have produced the most new farm income from livestock. Another successful livestock income generator is the Little Kentucky Smokehouse which purchases over one million hams annually, the majority of which are from Kentucky raised hogs.

The next largest farm income generator was the marketing and promotional sector with an estimated \$8 to 12 million in new farm income generated annually. Dr. Harry Kaiser from Cornell University was hired as a consultant to the UK Evaluation team. Dr. Kaiser was asked to estimate the impact of the Kentucky Proud state branding campaign and the impact of Allied Food Marketers West technical assistance and promotional work. Dr. Kaiser concluded that the Kentucky Proud state branding program run by the Kentucky Department of Agriculture is having a positive impact of generating new farm income, with an estimated \$2.89 to \$4.65 of farm income generated for each dollar spent on the program. In looking at results from commodity promotional programs both at the national and international level, it was determined that the returns to technical assistance expenditures are typically not as large as returns to promotional campaign investments in terms of income generated per dollar invested. Dr. Kaiser estimated the returns to technical assistance to be \$2.86 in additional farm income generated for each dollar invested in technical assistance. The UK Evaluation Team cross-checked these results with additional farm income estimates for each project. The results from combining the projects yielded a return of \$3.19 in additional farm income (for the period 2001–2007) per dollar invested from the ADF.

The value-added sector projects have resulted in an estimated \$6.1 million increase in farm income. The projects generating the largest additional farm income are purchasing commodity grains and converting them to ethanol, bio-diesel, industrial glue products, soy oil and soybean meal. The Commonwealth Agri-energy Cooperative returned exceptional patronage dividends to its farmer members during the first three years of operation (44 cents to \$1 per bushel). The cooperative ownership structure has facilitated more farm income generation as profits have flowed back to the farms from their ownership stake in the business. Current high grain prices have reduced the profitability of ethanol production. Experts estimate there is approximately \$7.00 worth of ethanol per bushel of corn. With corn prices over the \$5.00 mark it is difficult to make a profit processing ethanol at this time. Several other value-added businesses that received ADF

assistance pay a premium above market price when purchasing Kentucky agriculture products. In many cases the ADF award was structured as a forgivable loan with the forgiveness mechanism a set write-down on the premiums paid per bushel or the amount of produce purchased from Kentucky farmers.

The horticulture sector projects have increased farm income by an estimated \$7.5 million. The largest income generators were the five produce marketing cooperatives and the Kentucky West Nursery Co-op. Together these horticulture projects generated approximately \$2.7 million in new farm income annually. For reasons discussed further in the horticulture impacts section, all but two of these cooperatives have ceased operations. However, neither produce nor nursery crop farm cash receipts have declined in the post horticulture co-op era. This is because most of the former co-op growers have continued to produce and market horticulture crops. The other horticulture project that is having a positive impact on farm income is the Horticulture Council, which is estimated to have generated approximated \$2.5 million in additional farm income annually. The main effects of the Horticulture Council have been to expand the knowledge and skills of new and existing fruit, vegetable, greenhouse and nursery producers through focused on-farm, regional and university research trials and consultations and focused marketing assistance from the Kentucky Department of Agriculture. The technical knowledge and experience of Kentucky’s horticulture producers has been greatly improved, resulting in more farms producing horticulture crops successfully. This is evidenced by a 47% increase in horticulture cash receipts in Kentucky from 2001 to 2006. This is 21 percentage points over the national horticulture cash receipts statistics (see the horticulture impact section for further discussion).

Table 14: *Estimated annual additional farm income generated (2006 estimates).*

	Farm Income Generated Annually			
	Large	Medium	Small ^a	Total
Livestock	\$15,440,000	\$2,534,833	\$1,903,463	\$19,878,296
Horticulture	\$5,642,611	\$108,500	\$1,821,889	\$7,573,000
Marketing	\$8,633,333	\$150,000	\$66,231	\$8,849,564
Value-Added	\$5,254,000	\$557,588	\$325,725	\$6,137,313
Other	\$23,000	\$52,500	\$0	\$75,500
Total	\$34,992,944	\$3,403,421	\$4,117,308	\$42,513,673

^a Small project results extrapolated from sample.

New Jobs

Jobs created by ADB projects are classified here as either part-time year-round, part-time seasonal, full-time year-round, full-time seasonal, or non-specific. The total number is underestimated since in several interviews respondents indicated jobs had been created without providing any specific numbers. These were jobs created directly as a result of projects; many more jobs have been created indirectly from ADF investments.

The larger number of small non-model projects (111), not surprisingly, created the greatest number of jobs. There was almost twice as many jobs created by the 31 large projects than the 33 medium projects. Clearly, the small non-model projects have been especially successful in creating jobs at low investment costs to the ADF. (Table 15).

Table 15: *Estimated number of jobs created by project size.*

	New Jobs			Total
	Large	Medium	Small ^a	
Part-time year-round	20	28	65	113
Part-time seasonal	0	11	304	315
Full-time year-round	255	69	165	489
Full-time seasonal	190	29	178	397
Total	465	137	712	1314

^a Small project results extrapolated from sample.

The most jobs were created in the horticulture sector (501), followed by the livestock sector (412). The value-added sector produced the most full-time year round jobs (184). These jobs can have a significant effect on local economies, especially in rural areas. Nearly 35% of the jobs created were full-time year round and many provide benefits. Few jobs were created by the two large marketing projects. However, job creation may not be a good indicator of a project's impact. Furthermore, creating jobs was not a primary goal for those projects. Overall, the impact of the ADF investments on job creation has been significant. (Table 16).

Table 16: *Estimated number of jobs created by project category.*

	New Jobs					Total
	Livestock	Horticulture	Marketing	Value Added	Other	
Part-time year-round	67	23	17	4	0	111
Part-time seasonal	93	102	5	117	0	317
Full-time year-round	100	157	184	12	35	488
Full-time seasonal	152	219	13	13	0	397
Total	412	501	219	147	35	1314

Overall, the impact of the ADF investments on job creation has been significant. Nearly 90% of the jobs created were full-time and many provide benefits. In terms of return on investment, the average annual cost for each job created is less than \$15,000. This is considerable given that the long term individual and social benefits of a full-time job with benefits far exceed the one time cost of these investments.

Tobacco Farmers

One of the main tenets of the Agricultural Development Fund is to develop alternative farm enterprises other than tobacco. It follows suit that tobacco farmers should be involved in new agriculture opportunities developed with the ADF investments. In order to focus assistance to this group, many of the forgivable loan provisions developed for the ADF funded projects state that tobacco farmers will be provided services or products at a reduced cost. In some cases it is stipulated that ONLY tobacco farmers can participate. An example of the latter is the computer and welding courses offered exclusively to tobacco farmers by the Kentucky Community and Technical College System. Other examples are livestock processing discounts only for tobacco producers and ADF loan forgiveness based on purchasing products from tobacco farmers. The UK Evaluation team was informed during several different interviews across the state that the focusing of monetary benefits solely to tobacco farmers has created hard feelings in some communities. This exclusion is being implemented commonly by non-model projects and sometimes by County Councils. The debate, then, is whether to specifically help tobacco farmers or to help all farmers wherever agricultural income and diversification opportunities may exist.

It is impossible to get an exact count of how many current or former tobacco farmers have been impacted by the ADF investments. Each of the non-model projects was asked during the interview and site visit, “have they impacted tobacco growers and if so how many”. Depending on the nature of the project, we would get back either a specific number of farmers or a very broad estimate of approximately what percent of their customers or members were tobacco growers. Using the project interviewee’s estimates, approximately 50,000 tobacco farmers have been impacted or involved in some way with the ADF large, medium and small non-model programs (Table 17). This may be an over-estimate, because producers could have been involved in more than one non-model funded program at the same time, such as a cattleman who also has a horticulture enterprise, attended a community college training program or was a member of the KY Proud marketing effort. The Kentucky Beef Network and the Kentucky Cattlemen’s Association have had an impact across the entire Kentucky beef industry. They estimate that three-fourths of the Kentucky’s 40,000 cattle producers have also raised tobacco at some time.

Table 17: *Estimated number of tobacco farmers impacted by project category and size.*

	Number of Tobacco Farmers			
	Large	Medium	Small ^a	Total
Livestock	31,376	3,446	1,373	36,195
Horticulture	4,362	256	573	5,191
Marketing	2,390	19	213	2,622
Value-Added	3,762	353	43	4,158
Other	1,665	244	0	1,909
Total	43,555	4,318	2,202	50,075

^a Small project results extrapolated from sample.

Overall, the large projects have had the most impact on tobacco farmers. This is due to the larger number of farmers affected by these projects, not to focusing specifically on tobacco farmers. Large groups that have been impacted by projects include: beef and dairy producers, forage producers, corn and soybean growers, goat and sheep producers, horticulture farmers and Kentucky Proud program participants.

In summary the ADF investments impacted a large number of Kentucky tobacco farmers by involving them in other agriculture opportunities being developed with the assistance from the Agriculture Development Fund.

Part-time Farmers

There were more part-time farmers impacted by the various projects in the livestock category than in any other. In livestock more than 32,000 part-time farmers were impacted, while in horticulture there was an estimated 3,746 (Table 18).

Table 18: *Estimated number of part-time farmers impacted by Project category and size.*

	Number of Part-time Farmers			
	Large	Medium	Small ^a	Total
Livestock	30,028	1,943	521	32,492
Horticulture	2,245	251	1,250	3,746
Marketing	2,390	25	343	2,758
Value-Added	100	286	25	411
Other	3,310	2,456	0	5,766
Total	38,073	4,961	2,139	45,173

^a Small project results extrapolated from sample.

Youth

Several projects directly impact youth and many others do so indirectly. Although monetary (farm income) impacts on youth are not a large component of the ADB funded projects, educational programs have certainly made a positive impact from many youth contacts (100,000+). Seven large and medium projects with over \$10 million in ADB funding either focused on impacting the youth of Kentucky or have had a direct impact in some way (Table 19).

Some highlights of youth impacts from these projects include:

- Kentucky FFA, Inc. used approximately 25% of their funds for Project LEAD which went to youth scholarships in 2005. FFA also matched grants to local FFA chapters for Ag curriculum and computers. There are approximately 14,000 FFA

Table 19: *Estimated number of youth impacted.*

	Number of Youth			
	Large	Medium	Small ^a	Total
Livestock	50,000	767	521	51,288
Horticulture	291	64	70	425
Marketing	20	80	343	443
Value-Added	520	100	25	645
Other	23,025	24,243	0	47,268
Total	73,856	25,254	959	100,069

^a Small project results extrapolated from sample.

members in Kentucky from 115 counties and FFA camps host between 1,500 and 1,800 youth per year.

- Friends of Kentucky 4-H, Inc. hosts a Biotechnology camp where youth conduct research and development. 4-H also has a Science, Engineering, and Technology (SET) initiative, project power point, and a GIS project geared toward youth in the state. All of these programs combined affect approximately 7,000 youth from 2,149 families in 99 counties.
- The Kentucky Cattlemen’s Association provides Ag education in approximately 200 to 300 schools throughout the state. They also provide and/or support programs through COSI, the state fair, and Gourmet Garden. These programs reach thousands of youth.
- The Kentucky Vocational Agriculture Teachers Association provides a modern agriculture curriculum to 24,000 Ag students across the state.
- The Kentucky Dairy Development Council supports the Kentucky KATE program, which is a demonstration effort, geared to youth to educate them about the dairy industry. 125,000 people see the exhibit at events throughout the year.
- The UK Research Foundation Entrepreneurial Coaches program challenges youth to create inventions and enter a writing contest about entrepreneurship. Around 100 students have participated in these challenges.
- The Community Ventures Corporation has a Farm Youth Program where they make loans to high school students for on-farm projects, equipment, or infrastructure. So far they have made 11 loans to 6 youth in Taylor County.

Forty-eight large, medium and small projects have had a variety of indirect effects on Kentucky youth. Indirect effects include: youth involved in a project, a project financially supports youth programs, youth are employed (mostly part-time) by an ADB recipient, youth are a part of the farm families effected by projects, youth are educated through project demonstrations or a project being part of the Kentucky State Fair, youth have been a part of agri-tourism by visiting or touring project sites and related activities.

A select group of major impacts from the state non-model investments are summarized in the following table. There were positive impacts for all sizes of non-model investments. These investments had an impact across all of the sectors of agriculture that were evaluated.

Tobacco Impacted Communities

The \$86 million invested in non-model projects has generated additional farm income of about \$42 million per year (or approximately \$161 million over the study period). Since most of the non-model projects were located in rural areas, there has been an obvious secondary impact on businesses and institutions in many rural Kentucky communities. The non-model projects created additional output and jobs as a direct impact of the investment. The secondary impact in the communities comes from purchases of inputs, related jobs, and new income created among all of the businesses associated with the operation of the new non-model project.

The secondary impact of the non-model investments can be measured by economic multipliers. Dr. Alison Davis at UK has estimated various multipliers using IMPLAN data to analyze agricultural industries (see “The Importance of Agriculture” by Dr. Davis, UK Department of Agricultural Economics, 2007). For production agriculture, the value-added (or income) multiplier for Kentucky is 2.02 and for agri-processing businesses, the multiplier is 2.21. Therefore, the IMPLAN data for Kentucky suggest that when production agriculture realizes a \$1 change in income, total income in the study area changes by \$2.02.

Most of the non-model investments have been related to production agriculture or agri-processing and located in central and western Kentucky counties. Thus, the rural community impact of the \$86 million invested in non-model projects, based on the \$161 million of additional income generated, is about \$325–355 million. This is a measure of the impact on the rural communities from the ADF investments in non-model projects. Since the multiplier effect will generally increase for the first three years and then begin to level-off, it can be expected that the positive impact on communities will continue 5–7 years after the project reaches full operation.

There are also employment multipliers which measure the number of new jobs created in industries and businesses linked to the new ADF-funded projects. However, job creation has been low and primarily seasonal or part-time. Only 488 of the estimated 1,300 jobs created by the non-model projects were “full-time, year round” jobs and these were created in a large number of locations. Thus, the UK Team did not feel it would be appropriate to use multipliers to estimate the indirect or secondary impact of job creation in communities.

The loss of tobacco production affected a large number of Kentucky communities, especially in eastern and central Kentucky where the historical marketing quotas were tied to land ownership. It is clear that the non-model investments have had some positive impacts on income in these communities where new projects have been created. However, it is also apparent that there has been relatively little non-model investment in counties in eastern and northeastern Kentucky. Since production agriculture is primarily small-scale and livestock-oriented, it would appear that assisting communities in these regions will require somewhat broader, community-based economic development activities which reach beyond production agriculture and value-added processing.

Leverage of ADF Funds

One of the ADF funding criteria is that most projects must at least match the ADF money awarded with a minimum of a dollar for dollar match. Over 70% of the participants interviewed indicated that the ADF money helped them leverage other funds and this was particularly the case on the large projects where 71% of the participants “strongly agreed.”

Table 20: *The ADF money helped me leverage other funds for this project.*

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Strongly Agree	71%	45%	8%	44%
Agree	19%	24%	40%	27%
Disagree	6%	21%	32%	19%
Strongly Disagree	3%	3%	12%	6%
N/A	0%	6%	8%	4%
Total	100%	100%	100%	100%

When evaluating the overall efficiency of the ADF it is important to note the total amount of funds the projects included (leverage for ADF investment). During the course of project interviews, site visits, and referencing ADF applications and reports, the UK Evaluation Team identified approximately how much additional capital went into each project besides the ADF award. For the large, medium and small non-model programs an investment of \$86 million in ADF funds was made. This money was matched slightly over dollar for dollar by the projects with \$96 million of outside capital (Table 21). In some cases the match was a bank loan, in other cases it was capital contributed by the on-going business. In the case of public institutions, the ADF funds were matched in-kind with staff salaries and expenses. The large projects did not match the ADF investment dollar for dollar. Rather they matched \$0.95 cents per dollar of ADF funds. This is partly due to the \$4 million in ADF investments in youth groups which required no matching funds. The medium size projects leveraged \$2.14 per ADF dollar spent and the small projects \$2.01 per ADF dollar spent.

Additional leverage of the ADF investments occurred at the project level. Some projects level generated additional matching funds that were not measured for this report. It is likely that the numbers reported here is a conservative estimate of actual leverage. For example, the Kentucky Department of Agriculture matched the Kentucky Proud Program ADF grant with in-kind salary and expenses for their personnel. That amount is accounted for here. However, KDA went further and leveraged the Kentucky Proud advertising money by requiring participating retailers to provide matching funds for joint advertising. Many of the retailers over matched the KDA advertising money by paying for larger promotions and more media exposure. Another way that KDA was able to leverage additional advertising funds was to provide celebrity endorsements (which were donated at no charge to KDA) in exchange for the retailer’s commitment to pay for advertising that promotes Kentucky products.

Table 21: *Estimated additional funds leveraged.*

	Additional Funds Leveraged			
	Large	Medium	Small ^a	Total
Livestock	\$8,212,767	\$9,425,633	\$3,424,456	\$21,062,856
Horticulture	\$15,090,997	\$1,301,000	\$4,258,963	\$20,650,960
Marketing	\$5,329,300	\$249,171	\$677,508	\$6,255,979
Value-Added	\$38,118,309	\$3,836,192	\$243,208	\$42,197,709
Other	\$4,031,465	\$2,173,545	\$0	\$6,205,010
Total	\$70,782,838	\$16,985,541	\$8,604,135	\$96,372,514

^a Small project results extrapolated from sample.

The greatest leverage to ADF money occurred in the value-added processing sector. This is due to the size of the enterprises involved such as ethanol manufacturing, flour milling and bio-diesel production. These ventures require large capital investments of which the ADF money would be only a small part of the total financing needed. Approximately \$2.29 of additional funds was leveraged by the value-added sector for every \$1 of ADF invested.

In summary, the Agriculture Development Board’s investment criteria of requiring at least a dollar for dollar match for ADF funded projects appears to be met. All of the non-model projects together matched the ADF funding \$1.11 per one dollar invested.

Summary of Specific Impacts

The specific major impacts by project category and size are summarized in the following table. For all 175 non-model projects, the estimated annual additional farm income is \$42 million for a total income impact over 2001-2007 of \$161 million. That represents \$1.87 of farm income generated per dollar of ADB investment in non-model projects.

Large and Medium Project Rating System and Results

The Non-Model Projects represent a broad array of investments with widely diverse goals and activities ranging from large and small capital-intensive value-added processing (e.g., Little Kentucky Smokehouse, Commonwealth Agri-energy, Siemer Milling or Boones Abattoir); to technical assistance/education/marketing “packages” of assistance to a group of producers (e.g., Horticulture Council, Beef Network); to cooperative marketing projects for horticulture, aquaculture, or nursery crops; to purely educational/training programs (e.g., Digital Ag Curriculum, Welding and Diesel training). Since all the large and medium projects were visited by the UK Team, a rating system was developed to summarize relative performance despite the diversity in scale of investment or nature of activities.

Utilizing data from the survey questionnaires and information from the site visits, each investment was initially ranked based on activities initiated, goals achieved, and evidence of positive

Table 22: *Non-model projects specific impacts by sector and size 2001-2007.*^a

	No. of projects	Amount of Award (millions)	Amount Leveraged (millions)	Income Generated: ^b		Income Generated ^b per \$1 of Investment	New or Expanded:			Tobacco Farmers Impacted
				Additional Annual (millions)	Total 2001-07 (millions)		Markets	Jobs	Products	
Large/Medium Projects by Sector										
Livestock	18	\$18.5	\$17.6	\$18.0	\$58.3	\$3.15	9	117	21	34,822
Marketing and Promotion	3	\$10.6	\$5.6	\$8.8	\$33.9	\$3.19	19	8	34	2,409
Horticulture	12	\$23.6	\$16.4	\$5.8	\$32.0	\$1.36	9	232	71	4,618
Value-Added Processing	16	\$18.0	\$42.0	\$5.8	\$24.2	\$1.35	11	210	22	4,115
Education, Leadership, Other	15	\$11.4	\$6.2	\$0.08	\$0.24	\$0.02	0	35	27	1,909
Impacts by Sectors	64	\$82.2	\$87.8	\$38.4	\$148.6	\$1.81	48	602	175	47,873
Projects by Size										
Large Projects	31	\$74.3	\$70.8	\$35.0	\$136.4	\$1.84	35	465	108	43,555
Medium Projects	33	\$7.9	\$17.0	\$3.4	\$12.2	\$1.55	13	137	67	4,318
Small Projects ^c	111	\$4.3	\$8.6	\$4.1	\$12.8	\$3.00	100	712	347	2,202
Est. Total Impact	175	\$86.4	\$96.4	\$42.5	\$161.4	\$1.87	148	1,314	522	50,075

^a Projects that were awarded funds in 2007 are not included.

^b Estimates.

^c Small project results extrapolated.

impacts. Since some projects were only recently funded, no rating (NR) was given to projects which were not yet in full operation or implementation. The project rating system includes one to five “stars,” indicating relative performance in achieving goals and having positive impacts:

- ★ = *few or no goals accomplished; no positive impacts*
- ★★ = *most or all goals attempted; limited evidence of positive impacts*
- ★★★ = *most or all goals accomplished; evidence of positive impacts*
- ★★★★ = *all goals accomplished; clear, documented positive impacts*
- ★★★★★ = *all goals accomplished; evidence of sustained positive impacts; indications that benefits are greater than ADB investment*

As the Expert Groups were convened to assist the UK Team with additional perspective on key sectors of Kentucky’s agriculture, insights from those discussions were used to adjust the rankings for various projects. Five projects were given an NR-rating because of their recent funding date and short period of implementation.

The results of the project ratings are contained in the following tables. The general pattern of relative performance is a “normal” distribution centered on three stars. Nineteen of the 31 large projects and 20 of the 33 medium projects received a rating of 3, 4, or 5-stars, indicating strong performance on both goal achievement and documented positive impacts. Only 6 projects (8%) received a 1-star rating, indicating nonperformance. Some of these projects are defunct (e.g., KentuckyVirtual.com) or have abandoned implementation of project goals (e.g., Burns Larkin Farm, Pig Improvement Corp.).

In determining these project ratings, the UK Team was aware that there is a time-frame consideration in the emergence of outcomes. In the initial evaluation proposal, the evaluation model was presented that included short term, medium term, and long term outcomes. This was done because the ADF has only been operational since 2001, and projects included in the study have

been awarded through 2006. Current information was included, if available, through the time of the interviews, which occurred in 2007. The agricultural development fund, therefore, has not been in existence long enough to determine the final or long term impacts of most of the projects. Thus, this rating system should be considered “fluid,” recognizing the dynamic nature of the investments and potential outcomes. The reader should consider this evaluation as a picture of activities and progress in the summer and fall of 2007.

In gathering the evaluation data for the projects, the evaluation team did not categorize the outcomes and impacts as short term, medium term, or long term. Rather, all outcomes and impacts were considered to the extent that they were reached at the time of the evaluation study, during 2007. However, the model that recognizes that project impacts will continue to be realized over time is very important to remember. When looking at the project impacts reported in this study, it is also important to keep in mind the time frames of the ADF system as a whole as well as the time at which the individual projects received their funds. It must be recognized that the true long term impacts of agricultural development funds are still emerging, and that long term impacts will have to be determined by future studies in five years, ten years, or perhaps even longer.

Given more implementation time, certainly some of the 2-star rated projects have potential to reach a higher level of performance but most of the other projects with this rating have not been able to achieve goals and will not have appreciable impacts on Kentucky agriculture.

Table 23: *Large project performance ratings.*

Recipient	Project Description	Award	Year	Rating
Commonwealth Agri-energy	Ethanol Plant	\$9,311,000	2003	★★★★★
Kentucky Horticulture Council	Marketing and Technical Support	\$8,685,671	2001, 2003 & 2005	★★★★★
Kentucky Beef Network	Beef Cattle Marketing & Technical Support	\$8,545,863	2001	★★★★★
Kentucky Dept. of Agriculture	Marketing and Promotion	\$5,329,300	2003 & 2006	★★★★★
Little Kentucky Smokehouse	Ham Processing Expansion	\$1,950,000	2003	★★★★★
Siemer Milling	Wheat-based Glue Extender Facility	\$1,000,000	2004	★★★★★
Kentucky Cattlemen's Association	Collaborative Marketing	\$1,930,000	2003	★★★★
KCARD	Center for Cooperative Development	\$1,250,460	2001 & 2003	★★★★
Buffalo Trace Area Development District	Agricultural Revolving Loan Fund	\$1,000,000	2003	★★★★
Boone's Abattoir	Livestock Slaughter and Processing Facility	\$572,676	2004	★★★★
Kentucky Thoroughbred Owners and Breeders	MRLS Research I & II	\$501,200	2001 & 2003	★★★★
UK KECI	Entrepreneur Development	\$1,282,206	2003	★★★
Lake Cumberland Milling	Grain Milling	\$1,165,000	2004	★★★
Kentucky Community and Technical College System	Computers for Farmers - 2	\$1,155,000	2005	★★★
Central Kentucky Growers	Cooperative Management Recruitment and Equipment	\$1,033,988	2001 & 2004	★★★
KY Grape & Wine Council	Technical Assistance for Grape and Wine Production	\$785,125	2003	★★★
Creech Services	Compost Production Expansion	\$618,309	2005	★★★
Kentucky West Nursery Co-op	Nursery Stock Cooperative	\$26,350	2001	★★★
Allied Food Marketers West	Agribusiness Incubator Development	\$4,891,561	2005 & 2006	★★
West Kentucky Growers Cooperative	Cooperative Development and Expansion	\$3,760,326	2001	★★
Friends Of Kentucky 4-H	Youth Endowment Program	\$2,000,000	2001	★★
Kentucky FFA Foundation	Youth Endowment Program	\$2,000,000	2001	★★
Bath County Agricultural Extension Foundation	Agricultural Education & Marketing Center	\$1,520,000	2002 & 2003	★★
Green River Produce Marketing Cooperative	Cooperative Operating Capital	\$1,258,946	2001 & 2003	★★
Purchase Area Aquaculture Cooperative	Cooperative Storage and Handling Facility Improvements	\$1,191,525	2001	★★
Cumberland Farm Products	Cooperative Equipment and Operating capital	\$684,649	2001 & 2006	★★
Pig Improvement Company	Facility Construction	\$800,000.00	2004	★
Knotwood Craftsmen Investments Corporation	High-tech Woodworking Facility and Woodworking School	\$642,000	2005	★
Kentucky Dairy Development Council	Infrastructure Development	\$2,450,170	2006	N/A
Owensboro Grain Company	Biodiesel Facility and Equipment	\$1,151,250	2006	N/A
Kentucky Ag Heritage Center	Study and Design	\$1,000,000	2006	N/A

Table 24: *Medium project performance ratings.*

Recipient	Project Description	Award	Year	Rating
Burton Livestock	Dairy Heifer Custom	\$424,818	2006	★★★★★
Equus Run Vineyards	Winery expansion	\$263,825	2001	★★★★★
Evans Orchard and Cider Mill	Apple Cider Processing	\$122,923	2001	★★★★★
Katelyn's Honey	Value-added food products	\$293,850	2006	★★★★★
Murray State University Foundation	Ag Diversification, Demonstration & Education	\$257,995	2003	★★★★★
Kentucky Vo-Ag Teachers Association	State-wide Digital Ag Curriculum	\$250,000	2003	★★★★★
Roundstone Native Seed	Native Grass Seed Production	\$202,600	2002	★★★★★
UK KALP	Leadership Development Program	\$146,360	2006	★★★★★
Thoroughbred Shrimp Company	Freshwater Prawn Seedstock Hatchery	\$125,000	2003	★★★★★
Aquaculture of Kentucky	Hatchery & value-added fish products	\$411,500	2003	★★★
KY Forage & Grasslands Council	Forage Education & Extension Marketing Assistance	\$362,561	2003	★★★
Christian County Grain	Specialty Grain Marketing	\$327,419	2001	★★★
Shuckman's Restaurant Service	Smoked Fish Aquaculture Products	\$300,000	2002	★★★
Kentucky State University Bee Project	Honey Extraction Facilities	\$292,750	2002	★★★
Community Ventures Corporation	Ag Micro-Loan Program	\$275,000	2002	★★★
KY Highlands Investment	Ag Micro-Loan Program	\$158,750	2002	★★★
Maysville Community and Technical College	Welding & Diesel Courses for Farmers	\$124,800	2006	★★★
Fishmarket Seafoods	Freshwater Prawn Processing & Marketing	\$109,250	2003	★★★
Kentucky Poultry Federation	Poultry Indemnity Fund	\$102,000	2006	★★★
Goodinview Farms	Vegetable Packing Facility Equipment & Operating Losses	\$439,537	2003	★★
In Town Winery	Winery Development (Equipment)	\$295,509	2003	★★
John's Custom Meats	Livestock Slaughter & Processing Facility	\$250,000	2005	★★
Commodity Growers - Buffalo Trace Auction	Produce & Hay auction	\$220,000	2003	★★
Elmwood Stock Farm	On-Farm Compost Manufacturing	\$143,100	2001	★★
Shady Lane Poultry Farm	Poultry Hatchery for Pastured Poultry Production Seedstock	\$105,000	2002	★★
Kentucky Beekeepers Association	KY Adopted Honey Bee Development	\$100,103	2002	★★
Appalachian Sweet Sorghum Marketing Association	Sorghum Processing & Marketing Cooperative	\$100,000	2001	★★
Southeast Kentucky Agriculture Cooperative	Vegetable Marketing Cooperative	\$352,525	2003	★
Burns Larkins Farm	Goat Demonstration Farm	\$259,910	2002	★
ApoImmune	Bio-research - medical use compounds from tobacco plants	\$255,000	2002	★
KentuckyVirtual.com	Internet Marketing	\$250,000	2001	★
Agri-tourism Interagency	Develop & promote agritourism in Kentucky	\$400,000	2006	N/A
Kentucky Sheep & Wool Producers	Goat & Sheep Industry Development Office	\$184,000	2006	N/A

Estimated Impacts on Key Sectors

The final step in analyzing outcomes and impacts of the ABD investments examines the impact by key sector. To address the key question of “Where would Kentucky’s agriculture be without the ABD investments,” requires an overview of the changes occurring during 2001–2006 in key parts of agriculture and agribusiness where the major investments have been targeted. In the following sections we examine the situation in the following sectors: Livestock, Horticulture (including a review of investments in marketing cooperatives), Value-Added Processing, Marketing and Promotion, and Other (a category including education, leadership, and other projects difficult to categorize).

Livestock

There were 18 large and medium livestock related projects funded with ADF money during the 2001–2006 period. Four of these projects related to aquaculture; two projects each related to beef, dairy, poultry, forage and custom meat processing; and one project each for equine and pork. The total ADF livestock investment in these projects was \$18.5 million. Table 25 below lists the livestock related projects.

The livestock industry is a key sector in the Kentucky farm economy. With gross farm receipts in Kentucky exceeding \$4 billion, livestock accounts for nearly two-thirds of all cash receipts. Kentucky’s livestock cash receipts grew approximately 20% over 2001–2006, as compared with 12% growth in national livestock receipts. In comparison, the neighboring state of Tennessee (with a similar climate and land base) saw their livestock industry grow at a slower pace of 4% for the same period of 2001–2006 (Figure 5).

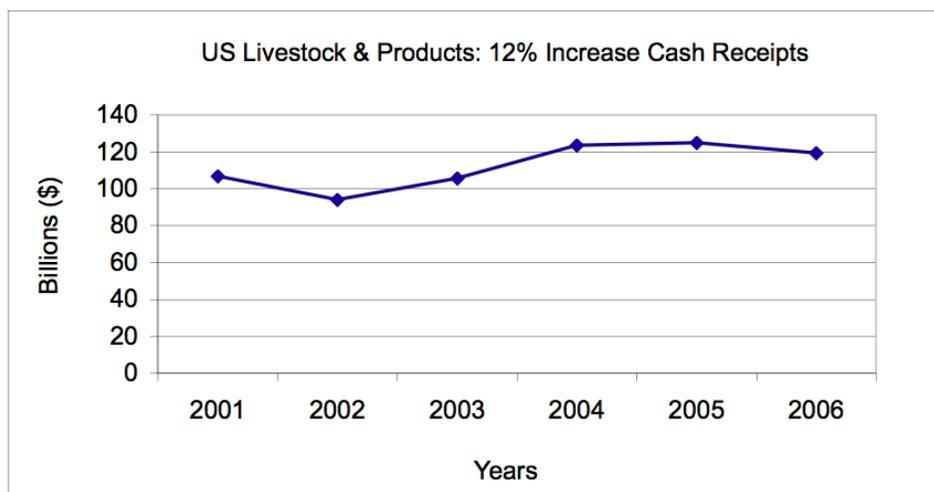


Figure 4: *Cash receipts for US livestock and products* (Source: USDA, ERS statistics).

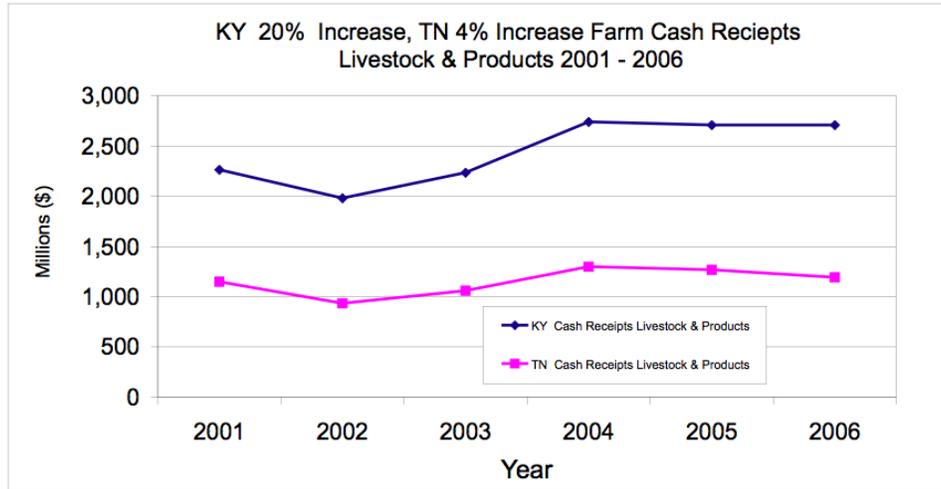


Figure 5: Cash receipts for Kentucky and Tennessee livestock and products (Source: USDA, NASS statistics).

Table 25: ADF livestock related investments 2001–2006.

Recipient	Project Description	Award	Year(s) Awarded
Kentucky Beef Network	Beef Cattle Marketing & Technical Support	\$8,545,863	2001
Kentucky Dairy Development Council	Infrastructure Development	\$2,450,170	2006
Kentucky Cattlemen's Association	Collaborative Marketing	\$1,930,000	2003
Purchase Area Aquaculture Cooperative	Cooperative Storage and Handling Facility Improvements	\$1,191,525	2001
Pig Improvement Company	Facility Construction	\$800,000	2004
Boone's Abattoir	Livestock Slaughter and Processing Facility	\$572,676	2004
Kentucky Thoroughbred Owners and Breeders	MRLS Research I & II	\$501,200	2001 & 2003
Burton Livestock	Dairy Heifer Custom	\$424,818	2006
Aquaculture of Kentucky	hatchery & value-added fish products	\$411,500	2003
Kentucky Forage & Grasslands Council	Forage Education & Extension Marketing Assistance	\$362,561	2003
Burns Larkins Farm	Goat Demonstration Farm	\$259,910	2002
John's Custom Meats	Livestock Slaughter & Processing Facility	\$250,000	2005
Roundstone Native Seed	Native Grass Seed Production	\$202,600	2002
Kentucky Sheep & Wool Producers	Goat & Sheep Industry Development Office	\$184,000	2006
Thoroughbred Shrimp Company	Freshwater Prawn Seedstock Hatchery	\$125,000	2003
Fishmarket Seafoods	Freshwater Prawn Processing & Marketing	\$109,250	2003
Kentucky Poultry Federation	Poultry Indemnity Fund	\$102,000	2006
Total Awarded		\$18,528,073	

Equine—The horse industry in Kentucky is the leading farm cash receipts earner at \$1.1 billion in 2006. Horse and mule sales have lead Kentucky’s livestock sales for the last ten years. Thoroughbred horses for the “sport of kings” in Central Kentucky are a major industry, but other breeds of importance are being bred, raised and sold, as well. The ADF funded project that related to the equine industry in Kentucky was a \$501,000 grant to the Kentucky Thoroughbred Owners & Breeders Association. The purpose of the grant was to provide an immediate source of funds to address an equine breeding stock health risk of potentially large proportion. The funds were matched more than one to one by the industry and used to contract research with the University of Kentucky. The goal was to discover the cause of the problem (Mare Reproductive Loss Syndrome—MRLS) and to develop successful control strategies. The goals were accomplished and confidence in Kentucky’s horse industry remained intact thereby insuring the continuation of this very important sector of Kentucky agriculture. The impact is a continuation of a \$1 billion dollar equine industry in Kentucky.

Poultry—The poultry industry has a similar story to tell, as the second leading Kentucky livestock enterprise. Poultry and egg cash receipts have risen 19% during the period and accounted for \$711 million in 2006. One ADF poultry related project was a \$102,000 grant to the Kentucky Poultry Federation which was matched by the industry. The fund was used to start an indemnity fund to facilitate the purchase and destruction of any non-commercial poultry flock that presented a disease health risk to the commercial poultry flock. The fund was established, resulting in making the substantial poultry sector of Kentucky agriculture more secure. A second ADF poultry related project was a forgivable loan of \$105,000 to establish an in-state hatchery and breeding facility to supply stock for pasture-raised poultry enterprises. To date, pasture-raised poultry production in Kentucky has not caught on in a significant way. Although, there are signs this aspect of poultry production is gaining in popularity. Evidence of this is that the only custom FDA approved poultry processing facility in Kentucky is fully booked for the 2008 processing season.

Cattle and Calves—Cattle and calves are the third leading livestock enterprise in Kentucky with sales of \$608 million in 2006. Cattle and calf sales in Kentucky are primarily beef cattle but there are some dairy cattle raised for herd replacements and steers backgrounded for beef. A significant effort has been made to assist the beef sector of Kentucky agriculture. This effort has had a large impact in moving the state’s beef industry forward. Kentucky has seen a 22% increase in cattle and calves cash receipts from 2001 to 2006. This increase is in line with the national figure of a 21% increase in cattle and calves receipts and considerably larger than Tennessee’s growth rate of 18%.

The two projects that directly impacted the beef industry in Kentucky are the Kentucky Beef Network and the Kentucky Cattlemen’s Association. These two groups made a joint effort to “raise the bar” on Kentucky’s beef industry.

The Kentucky Beef Network (KBN) is a limited liability company whose sole membership is made up of the Kentucky Cattlemen’s Association. The Kentucky Beef Network’s goal is to improve cattle health, genetics, forages and marketing opportunities for Kentucky beef producers. The Kentucky Cattlemen’s Association is a non-profit producer association with 93 member chapters across the state representing the 40,000 or more cattle producers in Kentucky. Together these two organizations received \$10.5 million of ADF grants to implement a comprehensive strategy to grow the beef sector of Kentucky agriculture. KBN has taken a multi-faceted approach to fulfilling

its mission. KBN has hired facilitators to work directly with cattle producers to assist with genetic selection, production efficiency improvements, targeted marketing efforts, data collection and management and cattle grading for CPH-45 sales. They have also provided cost-share funds to assist Kentucky stockyards to adopt the latest electronic cattle tracking and data management techniques in order to provide process verified program cattle (PVP) to fulfill specific market demanded opportunities. KBN facilitated and funded state-wide in depth cattle production educational workshops such as the Master cattlemen's (3,000+ participants), Master Grazer (600+ participants) and Cow College workshop series in order to build the human capital of the state's beef industry. These educational programs have undoubtedly increased the effectiveness of the county model programs offering cost-share for cattle handling equipment and bulls or semen for genetic improvements.

The KBN efforts have had a large positive impact on Kentucky's beef cattle industry by improving the Kentucky cattlemen's knowledge base, leveraging the impact of model program cattle investments and focusing on emerging markets such as the CPH-45 sales and the PVP cattle sales. The impact of these two marketing efforts provided specific measurements showing growth and is illustrative of the success and forward momentum being built by Kentucky's beef industry.

One of the focuses of the KBN is the promotion of Certified Pre-conditioned for Health (CPH-45) feeder calf sales as a way to add value to Kentucky Cattle. A multi-pronged approach was taken by offering on-farm consultations on CPH-45 program requirements, cattle grading, and record keeping. Kentucky livestock auctions were provided cost-share funds to install electronic animal ID readers to efficiently manage CPH-45 sales and other animal ID verified marketing programs.

Through the Cattlemen's Association ADF grant of \$1.9 million for promoting Kentucky's beef, pork and vegetable industries, the CPH-45 sales were heavily promoted to both in and out of state cattle buyers. The sales have gained support of both producers and buyers. CPH-45 feeder calf sales numbers have increased dramatically, (516%) since 2000. Calf sale numbers went from 5,396 calves sold in 2000 to 33,241 calves sold in 2006. KBN estimates producers average a \$40.95 per head premium by selling through the CPH sales. This estimate amounts to an extra \$1.35 million annually in farm income from CPH sales.

A second market development effort was under taken to develop an electronic ID system to verify individual animals and their age, origin and any other attributes of interest to buyers and sellers. This Process Verified Program (PVP) was deemed essential to develop export markets for high value cattle. The KBN therefore provided a cost-share program of \$2 million to provide technical assistance and cost-share for upgrades to Kentucky livestock markets and collection points. The new equipment made possible individual animal source verification, internet livestock sales, and the collection of carcass evaluation data for specific feeder cattle. As of June 2007, twenty-one livestock markets have completed updates to make them electronic animal ID ready. In conjunction with this equipment, KBN offered data management and ID verification services to Kentucky cattle producers via an internet based proprietary system. This combined effort resulted in 60,000 head of Kentucky PVP certified (Process Verified Program) cattle which KBN estimates receive an average premium of \$12 / head, which equates to \$720,000 in additional farm income, annually.

There appears to be clear evidence of positive impacts on Kentucky's cattle industry from the Model investments:

1. Direct measures: The most direct measurement of impacts of the ADF funded KBN and Cattlemen’s Association projects is the increase in CPH-45 feeder calf sales numbers which generated an additional \$1.35 million in annual farm income. The PVP cattle program added value of \$12 per head, resulting in an additional \$720,000 in annual farm income. Both of these farm income increases are a direct result of the ADF funded programs.
2. Indirect impact measurements: Only a small percentage (5%) of Kentucky feeder cattle are sold through the CPH-45 sales . If Kentucky’s reputation for providing quality cattle has improved overall (as a result of gains in producer knowledge and management operations, animal genetics, record keeping and livestock market efficiencies), the overall price of Kentucky feeder cattle in comparison to competing supply areas may have improved. Dr. Lee Meyer an Agricultural Economist at the University of Kentucky did an analysis of the basis for Kentucky 7-8 weight feeder cattle over the period (2002–2007). Dr. Meyer found that starting in 2005 the basis for Kentucky cattle has improved relative to the basis from other southeastern states of Alabama, Georgia and Tennessee (Figure 6). The data suggests a 2% basis improvement for Kentucky feeder cattle. Using 2006 cattle and calves cash receipts of \$608 million, a 2% improvement in prices relative to other suppliers, results in an estimated \$12.2 million increase in annual farm income.

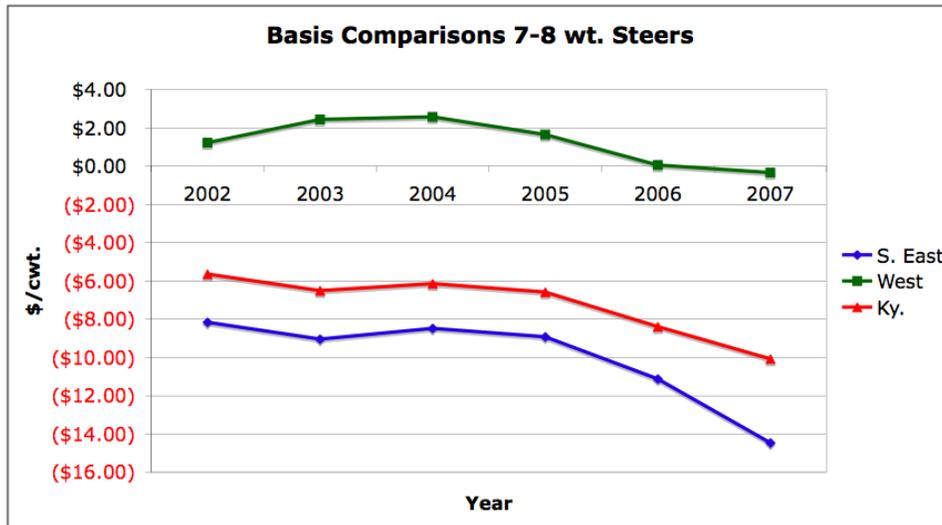


Figure 6: *Basis comparisons for southeast, west, and Kentucky* (Source: Dr. Lee Meyer, University of Kentucky).

3. A third approach is to compare Kentucky and Tennessee cash receipts for cattle and calves for the period 2001 – 2006. During that period Kentucky’s cattle and calves cash receipts increased 22%. During the same period Tennessee cattle and calves cash receipts increased 18%, or 4% less than Kentucky (Figure 7). If we attribute 50% of the improved Kentucky cash receipts to the ADF funded efforts, then a 2% change was brought about. This approach also results in an estimate of \$12.2 million in added annual farm income from cattle.

Forages—Two ADF funded livestock projects were related to forages; the Kentucky Forage & Grasslands Council, and Roundstone Native Seed. A total of \$565,161 of ADF were invested in the two projects. Kentucky Forage & Grasslands Council received a grant to hire a Hay Marketing

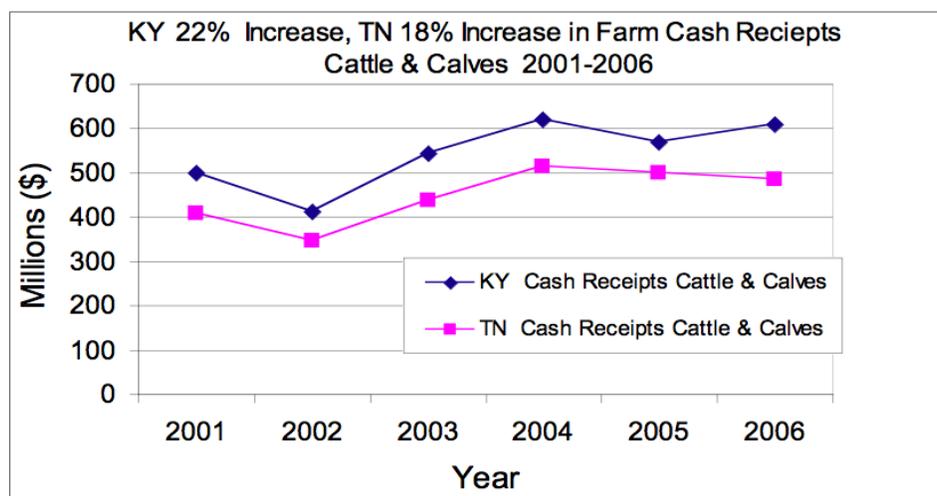


Figure 7: *Cattle and calves cash receipts for Kentucky and Tennessee*(Source: USDA, NASS statistics).

Specialist to educate Kentucky forage producers about quality hay production, grading and marketing. Producers were taken to see successful hay production systems in other areas, provided up to date Kentucky specific forage variety research information, presented workshops at conferences and regional field days and offered hay marketing assistance. Kentucky livestock producers were provided with hay nutritional evaluation techniques and knowledge of the hay grading classifications. Impacts were estimated based on the potential savings generated from producers purchasing hay based on its nutritional attributes and from an estimate of additional income generated by new and existing hay producers who produced better quality hay and sold it for better prices. The producer educational efforts of the Forage & Grasslands Council have gone hand in hand with the model programs for hay storage, forage improvements and shared use equipment. The two efforts have brought about real changes in farming practices and improved efficiencies.

Roundstone Native Seed is a privately owned venture that received a forgivable loan for equipment and facilities to establish a business of growing and marketing native grass seed. Native grasses are gaining in popularity due to their excellent habitat for wildlife and their ability to provide top notch forage crops during the heat of summer when most of Kentucky’s cool season forages are dormant. They have developed a market for their seed and are working with other farms in the area to have a multitude of native grasses and forbs seed grown. While the acreage of native seed is not large compared to other forage crops, the value per acre and the niche market should provide additional farm income for those farms involved in this venture for the long term. Forty-two farms produced seed for Roundstone Native Seeds in 2007.

Dairy Sector—Dairy farming is the fourth largest livestock enterprise in Kentucky, with cash receipts of \$179 million in 2006. Approximately 1,100 dairy farms are currently operating in the state. There has been a long term decline in the number of dairy farms in Kentucky and the nation. Part of the decline can be explained by industry consolidation with fewer farms managing a larger number of milk cows per operation. Dairy farming is a labor and capital intensive enterprise

that has faced large swings in milk prices and rising input costs. These two factors make dairy farming a difficult industry for mid-sized farms to compete and for young people get a started.

The Kentucky Dairy Development Council (KDDC) is similar to the Beef Network—it is a non-profit producer organization with a mission to improve the profitability of Kentucky dairy farming. After a one year initial start-up and a comprehensive needs assessment study, the Kentucky Dairy Development Council (KDDC) was awarded \$2.5 million of ADF grant money.

The long term goal of KDDC is to slow or stop the dairy industry decline in Kentucky and retain young farmers in the Kentucky dairy industry. To accomplish its goals, KDDC has undertaken the education of Kentucky producers on federal milk marketing order issues, improved milk production techniques, better record keeping and to be a resource to help individual dairy operations improve net farm income.

The KDDC was fully funded in December 2006 and has essentially been fully operational for only one year at the time of the site visit and interview. The long term impacts of the Kentucky Dairy Development Council cannot be measured at this time because the project has not had time to develop measurable production impacts over time. In the short run the KDDC has increased farm income \$140,000 in July 2007 by awarding Milk Incentive Leadership Program (MILK) incentive payments to 40 farms. This was the first quarterly payment for a potentially \$2 million, two year program (50% funded by industry) to provide incentives for comprehensive management changes that result in increased quality and output from Kentucky dairy farms. KDDC impacts Kentucky youth by funding “Kentucky Kate” a dairy cow educational interactive display which is seen by approximately 125,000 people in the course one a year.

Burton Livestock is a privately owned former dairy farm. They have stopped milking cows and now raise replacement dairy heifers on contract for dairies in the upper mid-west United States. Burton Livestock applied for and received an ADF forgivable loan of \$424,818 in order to greatly expand their replacement heifer business. Burton Livestock purchases new born dairy heifer calves from dairies and raises them to the bred heifer stage. He then sells the heifers back to the dairy farm where they were born. Burton Livestock works with other farmers in the area to have the calves bottle fed, backgrounded, and then bred before they are ready for sale. Burton Livestock obtained an ADF forgivable loan to expand their facilities and partial financing through the Kentucky Agricultural Finance Corporation for an operating line of credit. In the process they have hired 11 additional full-time employees and contracted with 35 – 40 other farms to raise bottle calves or background heifers. Mr. Burton states the business currently pays out \$1.4 million annually to contracted farmers for livestock raising

Pork Sector—Pig Improvement Corporation (PIC) was a for-profit corporation registered in the State of Wisconsin. Since the ADF award, PIC has been purchased by Genus to become part of a larger, internationally operated dairy, beef and swine genetics supplier. PIC literature states that PIC was the leading worldwide supplier of swine genetic improvement to the pork chain.

An \$800,000 ADF forgivable loan was awarded and paid to PIC in 2004 for the purpose of rebuilding one of PIC’s breeding swine genetics farms in Franklin, Kentucky. PIC was to provide discounts to Kentucky pig farms that purchase PIC boars or semen. They were also to develop a proprietary line of Kentucky specific pork genetics for the purpose of marketing Kentucky Pork. Neither of these goals has been met. After PIC was purchased by Genus they moved their head-

quarters to Hendersonville TN and laid off most of the personnel involved with the ADF forgivable loan. Genus then informed the Governors Office of Agricultural Policy that they cannot fulfill the terms of the agreement as written. Impact on the Kentucky pork industry is zero.

Sheep and Goats—According to the National Agriculture Statistics Service (NASS) there were 37,000 head of sheep in Kentucky in 2007. Goat numbers are not available from NASS but for our purposes are estimated at approximately twice as many goats as sheep—about 74,000 head. Both enterprises have enjoyed favorable prices for their livestock in recent years. Meat goat numbers in Kentucky have increased rapidly with demand for goat meat outstripping the current domestic supply.

The Kentucky Sheep and Wool Producers Association in cooperation the Kentucky Goat Producers Association submitted an application to the ADB in August of 2006. The purpose of the request was to form a jointly owned development office with a full-time paid co-executive director to represent and further the small ruminant industry in Kentucky. The Kentucky Sheep & Goat Development Office was formed and an \$184,000 ADF grant was awarded in September 2006. The two associations hired an Executive Director and an office was in place beginning in May of 2007.

The goals of the Sheep & Goat Development Office are to give producers a unified voice and to improve the profitability of sheep and goat production by educating new and existing producers on production and marketing. Impact: The Kentucky Sheep & Goat Development Office is too new to measure an impact of their efforts to date.

Burns-Larkin Farm (BLF) was a for-profit farm located in Mercer County, Kentucky, that focused on Boer Goat production for breeding stock. During its operation the BLF was the largest goat farming operation in the state. A business plan was developed to increase the size of the breeding flock, build additional facilities and work with the University of Kentucky to provide a goat demonstration-farm facility to advance Boer Goat production throughout the state. An ADF award of \$259,910 was awarded in September 2001 of which \$77,250 was a grant to set-up, staff and equip a goat demonstration-farm. The remaining ADF funds were awarded as a loan at 3% interest. Four years into the project the farm owner decided to sell the farm and repay the ADF loan. Impact: The goat demonstration-farm came into existence during a critical time in the development of the goat industry in Kentucky. The demonstration aspects of the farm were funded with a \$77,500 grant. The four years of operation and availability to “show and tell” meat goat production to new and beginning Kentucky goat farmers created farm income savings by avoiding costly mistakes.

Aquaculture—Four projects related to aquaculture were funded with ADF money from 2001 to 2006, totaling \$1.8 million. Two projects were hatchery/nursery businesses. One was a catfish processing cooperative and the other a comprehensive marketing effort for Kentucky freshwater prawns.

In order to produce aquaculture products farmers must be able to purchase good quality seed stock that can be successfully transported and stocked into farm grow-out ponds. Two hatcheries were funded with the ADF funds; Thoroughbred Shrimp Co. (freshwater prawns) and Aquaculture of Kentucky, LLC (hybrid striped bass, large mouth bass, tilapia, and catfish). The ADF funds have had an impact on Kentucky aquaculture by creating a nearby source of quality aquaculture seed

stock. The farm income generated by sales of (their customers) aquaculture products is estimated to be over \$500,000 annually.

An ADF forgivable loan was awarded to Fishmarket, Inc. of Louisville, Kentucky in 2003. For two years (2004–2005) Fishmarket coordinated the purchase, transportation, processing and marketing of Kentucky grown, freshwater prawns. They purchased prawns pond side from contracted Kentucky farmers and transported the product to the processor. They later marketed the de-headed, packaged for retail, frozen prawns. The product was well received in the market place but the price was too high compared to the price of similar but imported frozen prawns. The Kentucky freshwater prawns were therefore not competitive. Beyond two years of sales the Fishmarket project took a comprehensive approach to market development of a new Kentucky grown product. Unfortunately the market economics proved to be below the cost of production for Kentucky farms. The impact of this effort is to rule out Kentucky grown freshwater prawns as a potential crop for large scale production. The ADF funds were (in the UK Evaluation team's opinion) appropriately used to bear the risks of this new venture and test the wholesale market for Kentucky raised freshwater prawns.

An aquaculture processing and marketing cooperative was started in the Purchase Area of Western Kentucky in 2000. Simultaneous to this the Kentucky State Legislature established a \$4 million aquaculture infrastructure fund of which \$2 million was allocated for a cost-share program to construct aquaculture ponds. The Purchase Area Aquaculture Cooperative (PAAC) purchased land and constructed a medium sized processing facility to process catfish grown on members farms. An ADF forgivable loan was awarded in 2001 for the purpose of expanding the processing facility with the goal of being capable of processing 4 millions pounds of fish annually. Price competition from cheaper imported fish, start-up business production, management bumps, and less than adequate fish supplies eventually caused the cooperative to close in 2005.

At its peak, PAAC employed 46 full-time employees and processed fish from 436 acres of catfish production ponds for 34 member farms. An estimated 300 acres of catfish production are still being produced by former PAAC members. At current (2007) market prices the farm income from these ponds is estimated to be \$900,000 annually. There are now 3-4 times more fish growers and 3 times more catfish acres in Western Kentucky than before the PAAC Co-op was started. Fish farms have stayed in business in Western Kentucky, marketing their fish to live haulers for pay lakes and in some cases selling to out-of-state fish processing plants.

Direct Marketing of Beef, Pork and Lamb—Two ADF funded projects are related to processing livestock for retail meat sales. Boone's Abattoir in Bardstown and John's Custom Meats in Smith's Grove, Kentucky, were awarded forgivable loans totaling \$822,676. The forgivable loans were for construction or expansion of their processing facilities. The forgiveness mechanism was tied to providing USDA or custom meat processing at a discount for farmers who wish to direct market meat rather than sell live animals.

Both of these businesses have hired additional full and part-time personnel to handle the increased work load. Five additional full-time jobs and seven or eight part-time jobs have been created by the expansion of these businesses. Additional farm income has been generated by having the processing value-added service available for Kentucky farmers. Together these two businesses expect to service approximately 100 farmers who direct market their products, in addition to their

normal clientele. The estimated value-added to cattle for these direct marketers is estimated to be \$500,000 per year. In addition there are also hogs, lambs and rabbits processed for farm customers.

Table 26: *Estimated quantitative impact of livestock investments.*

No. of Projects	Award	Amount Lever-aged	Estimated Additional Annual Farm Income Generated	Farm Income Generated Per \$1 of ADF Investment	Tobacco Farmers Impacted	New or Expanded Markets
18	\$18,528,073	\$17,638,400	\$17,974,833	\$3.15	4,878	9

Horticulture

The ADB has invested nearly \$24 million in twelve projects related to horticulture between 2001 and 2006. Of the twelve projects, eight were focused on produce, one on nursery/landscape, one on honey bees and two on education, research and promotion. Five of the projects were organized as grower cooperatives. Table 27 contains a list of the specific projects and the amounts awarded.

Table 27: *ADF horticulture related investments 2001–2006.*

Recipient	Project Description	Award	Year
Kentucky Horticulture Council	Marketing and Technical Support	\$8,685,671	2001, 2003 & 2005
West Kentucky Growers Cooperative	Cooperative Development and Expansion	\$3,760,326	2001
Bath County Agricultural Extension Foundation	Agricultural Education & Marketing Center	\$1,520,000	2002 & 2003
Green River Produce Marketing Cooperative	Cooperative Operating Capital	\$1,258,946	2001 & 2003
Central Kentucky Growers	Cooperative Management Recruitment and Equipment	\$1,033,988	2001 & 2004
KY Grape & Wine Council	Technical Assistance for Grape and Wine Production	\$785,125	2003
Cumberland Farm Products	Cooperative Equipment and Operating capital	\$684,649	2001 & 2006
Goodinview Farms	Vegetable Packing Facility Equipment & Operating Losses	\$439,537	2003
Southeast Kentucky Agriculture Cooperative	Vegetable Marketing Cooperative	\$352,525	2003
Commodity Growers - Buffalo Trace Auction	Produce & Hay auction	\$220,000	2003
Kentucky Beekeepers Association	KY Adopted Honey Bee Development	\$100,103	2002
Kentucky West Nursery Co-op	Nursery Stock Cooperative	\$4,788,966	2001
Total Awarded		\$23,629,836	

The horticulture industry in Kentucky consists of produce, greenhouse, nursery, sod and floriculture crops. On a national level, horticultural sales have been expanding. Produce, particularly fresh produce, is in demand due to health attributives and a more ethnically diverse U.S. population. Ornamental horticulture and nursery crops are in demand for new housing and commercial developments and recreational pursuits. Cash receipts for all U.S. horticulture crops have risen 26% during the period 2001-2006, when the ADF was funding projects (Figure 8).

Compared to surrounding states, Kentucky’s horticulture industry is smaller (e.g., about one-fourth of Tennessee horticultural sales) but has experienced growth in cash receipts of 47% over 2001–2006 (Figure 9). This is significantly above the national industry growth rate. In comparison, Tennessee is a state with a similar climate and land base, has a horticulture industry considerably larger than Kentucky’s but grew at a lower rate of 20% during the period. The growth of horticulture cash receipts are shown on the two charts below.

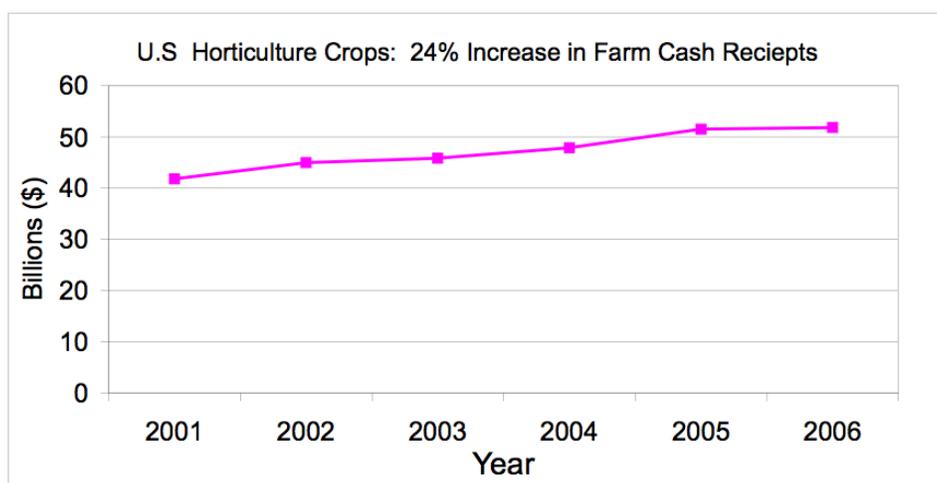


Figure 8: *Cash receipts for US horticulture crops*(Source: USDA, NASS statistics).

Grower associations, extension specialists, and state agriculture officials have recognized the horticulture industry opportunities and have worked together to try to stimulate more horticulture production within the state. The largest horticulture project funded by the Agriculture Development Board is the Horticulture Council.

The Horticulture Council is an industry group composed of producer representatives from all of the Kentucky horticulture professional associations. The Council has received ADF funding for a comprehensive industry development strategy designed to provide on-farm technical assistance, up to date production research, marketing, and advertising assistance. The Council has contracted most of the services to the University of Kentucky and the Kentucky Department of Agriculture. New and existing vegetable, fruit, wine grape, wine makers and nursery producers across the state have benefited from the higher level of targeted extension out-reach in the form of on-farm consultations, on-farm demonstrations and regional field days. This work has been backed up with on-going university research into variety selection and production system improvements. As new production has occurred, the Kentucky Department of Agriculture has promoted

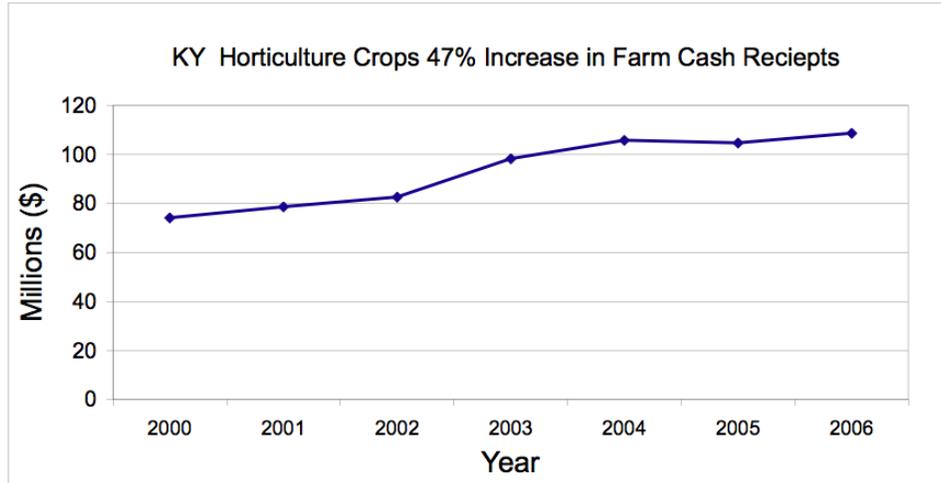


Figure 9: *Cash receipts for Kentucky horticulture crops*(Source: USDA, NASS statistics).

Kentucky grown products through the Kentucky Proud branding campaign. KDA has also offered tradeshow promotional assistance, producer directories and cost-share money for tradeshow booths and advertising.

The comprehensive approach to industry development funded by the ADB has had a significant positive impact on the horticulture industry in Kentucky. This can be illustrated by reviewing specific components of the horticulture sector:

Produce Sector—Nationally, produce cash receipts rose 24% over the study period, while Kentucky’s rose 70% and Tennessee’s rose 28% during the period 2000–2006. Clearly there is significant growth occurring in produce production in Kentucky. Implications are the ADF projects have had an impact here. Of the ten projects effecting produce crops, five were vegetable marketing cooperatives, one a private vegetable grower/shipper (packing shed), two produce auctions, and two technical assistance/research and promotional projects.

Vegetable Marketing Cooperatives—Five vegetable marketing cooperatives received ADF awards, all in the form of forgivable loans for a total of \$7.1 million from 2001 to 2006. [A separate, more detailed discussion of cooperatives concludes the horticulture sector summary.] Four of the five vegetable marketing cooperatives were in operation before the Agricultural Development Fund came into existence. Only the Southeast Kentucky Agriculture Cooperative began operation during the period 2001 to 2006 time frame and used ADF money to build their initial facility.

During the period 2000–2005 when four of the five produce co-ops were in operation they generated over \$26 million in sales for 155 farm members. The co-ops provided a wholesale marketing outlet for small and beginning produce farms that did not have the packing, cooling or volume marketing abilities on their own. Rather than the individual farm having to invest a substantial amount of money in post-harvest handling equipment and facilities, the co-ops provided these functions. Many farmers benefited by being able to learn how to grow produce and find out what kind of crops, quality and yields they could expect to produce as a result of initially growing for one of

the co-ops. Produce sales in Kentucky have risen 70% from 2000 to 2006. These are a result of more farms growing an increased amount of produce. Despite the closing of all but two produce co-ops, Kentucky farmers have continued to increase their vegetable production and are marketing through a diverse mix of direct markets, retail stores, wholesalers and produce auctions. Most of the former produce co-op members continue to grow produce crops.

The impact of the ADF money invested into the produce sector including the co-op investments has been significant and will continue into the future. This is evident by the continued rise in the Kentucky produce cash receipts, the gaining strength of Kentucky's direct markets (farmer's markets and roadside markets), the rapid growth of both the Fairview Produce Auction and the Lincoln County Produce Auctions, the increase in wine grape acreage and the continued interest of large scale produce buyers to contract with Kentucky farmers.

Produce Auctions—The popularity of locally grown produce among consumers and the growth of direct marketing outlets have created a customer base for produce auctions that can consistently offer good quality fresh produce. Two of the produce auctions operating in the state, the Fairview Auction in Christian County and the Lincoln County Produce Auction have grown dramatically. Both of these facilities are privately owned and are located where there is a significant Amish or Mennonite farm population. Both of these auctions had sales of over \$1 millions in 2007.

Two start-up, publicly-owned, produce auctions were funded through the ADF. These are the Buffalo Trace Produce Auction in Maysville and the Bath County Agricultural Marketing Center in Owingsville. Approximately \$1.7 million of ADF money was invested to construct the two facilities. The Bath County Agricultural Marketing Center accounted for most of the funding (\$1.5 million) and the Buffalo Trace Auction at \$220,000. The produce auction facility is only a small part of the Bath County Project. Other components are a commercial kitchen, large meeting facility, farmers market, and proposed retail store. During the first three years of operations the Bath County Produce Auction generated approximated \$74,000 in produce sales. The Buffalo Trace Auction generated approximately \$170,000 in sales of produce and hay. Both of these auctions are newly built facilities that were conceived as a way to open opportunities for local farms to grow produce crops. At present both auctions are struggling to attract buyers and sellers due to a low volume of production in the area. The difficulty with starting a new produce auction is having enough produce to attract buyers.

Grapes and Wine—There has been a strong resurgence of interest in locally produced “boutique” wines. This trend is evidenced by the rapid growth of new small wineries both nationally and in Kentucky. Kentucky went from having 115 acres of grapes in 2002 and 8 licensed wineries to having 700 acres of grapes and 44 licensed wineries in 2007. Clearly there is something happening with grapes and wine in Kentucky. The ADF funded project that has addressed this opportunity for produce growers is the Kentucky Grape and Wine Council (KGWC), which received a \$785,125 grant in 2003.

The overall purpose of the KGWC is to create a comprehensive program to support and expand the emerging Kentucky grape and wine industry. The award was used to hire a viticulturist and an enologist (wine making specialist) to work directly with grape growers and wine makers to help them be successful. An organization director to coordinate the council activities and carry out promotional activities was also hired. Approximately \$200,000 went towards grape production system research and variety trials conducted by the University of Kentucky.

To date, not all of the vineyards have reached a harvestable stage (3 years), nor have all the licensed wineries begun production. UK extension grape and wine soecialists estimate when in full production, the farm gate value of the current 700 acres of wine grapes could be as high as \$3.7 million annually and the value converted to wine could be as high as \$26 million.

Nursery/Greenhouse Crops—Nursery, greenhouse and floriculture crop cash receipts for the nation grew 23% from 2000 to 2006, while Kentucky and Tennessee grew 40% and 33% respectively. Two ADF funded projects affected the Kentucky nursery industry: the Horticulture Council and the Kentucky West Nursery Cooperative.

The Horticulture Council provided on-farm consulting to new and existing nursery producers by contracting with the University of Kentucky to hire Extension Associates to extend research based knowledge directly to each nursery enterprise, as needed. The Horticulture Council also funded new nursery production system research, such as the pot-in-pot system. KDA provided marketing assistance by hiring a nursery marketing specialist and providing tradeshow promotions and cost-share, and publishing the Kentucky nursery plant availability guide each year. Kentucky nursery growers have particularly benefited by these programs and have successfully opened new marketing channels to the lucrative northern markets for landscape trees.

The second ADF funded project that affected the Kentucky nursery industry was the formation of the Kentucky West Nursery Cooperative (KWNC). KWNC was an effort primarily by tobacco growers in the western most counties to diversify their farming into additional high value crops. A \$4.8 million dollar forgivable loan was awarded from the ADF. The growers used the money to make loans to their members to purchase planting stock, jointly purchase planting and harvesting equipment, construct a marketing and logistics facility and to hire the necessary management and marketing personnel. The co-op helped new growers get a start in the nursery business by providing access to low cost capital and a coordinated approach to market entry. After a number of years the members concluded the co-op operations were not sustainable due to high overhead and less rapid growth in sales than predicted. The members voted to close the cooperative. The assets were sold and all of the ADF funds were repaid except for \$26,350 which was forgiven. Of the co-op's 22 original members, 15 are still in nursery production. Some of the 15 have expanded their plantings fivefold. This ADF funded project has had an impact by introducing a new high value enterprise to some Western Kentucky tobacco farms and supporting the effort with low cost capital access, on-farm technical assistance, university research trials and marketing assistance. At minimum, \$500,000 in additional annual farm income is estimated to occur as a result of this project.

Sector Impact—The ADB-funded investments have clearly had a positive impact on Kentucky's horticulture industry. We estimate that the 12 horticulture-related projects leveraged \$16.3 million in relation to the \$23.6 million in ADB funding, or about a 1:0.7 ratio. More significantly, we estimate annual additional farm income generated in the short-run to be in the range of \$5–6 million per year, representing a 24% return on ADB investment, including the income from all of the produce cooperatives. Farm income generated continues to grow even though three of the co-ops are no longer operating because most of the produce growers have continued to grow and market crops. In addition, the produce auctions, farmers' markets, roadside markets, and wholesale produce buyers have expanded the opportunities for all produce growers in the state.

Table 28: *Estimated quantitative impact of horticulture investments.*

No. of Projects	Award	Amount Lever-aged	Estimated Additional Annual Farm Income Generated	Farm Income Generated Per \$1 of ADF Investment	Tobacco Farmers Impacted	New or Expanded Markets
12	\$23,629,836	\$16,391,997	\$5,751,111	\$1.36	4,618	9

Special Discussion of the Farmer Marketing Cooperatives

In its early phase, the ADB purposely put a high priority on funding marketing cooperatives as an efficient and effective method for impacting multiple farmers with each project. Within a six year period, the ADB invested \$9.3 million (combination of state and local funds) into seven Kentucky cooperatives. Of this total investment, \$2.1 million were returned to the ADB, resulting in a net investment of \$7.2 million. Today, of these co-ops, only one is still operating as a co-op, two are operating in some other form and two have ceased operations or have sold their facilities to a related business.

Table 29 summarizes the ADB investments in cooperatives, including amounts that were returned to the ADB, as well as member investment statistics. For the produce co-ops (with the exception of the Southeast Kentucky Vegetable Co-op), for every one dollar of ADB investment, there were \$3.34 of sales generated and \$1.65 of those sales were returned to growers.

Table 29: *ADB investment in cooperatives statistics (includes all co-op investments).*

A	ADB Investments	\$9,303,861
B	Membership	247
C	ADB Investment per Member (A/B)	\$37,667
D	Amount Returned to ADB	\$2,122,73
E	Net ADB Investment per Member (A-D)/B	\$29,073

During site visits and interviews, the following comments were made that describe members' and directors' perceived benefits of the ADF investments in their respective businesses:

- ADF financed cooling equipment which provided the following benefits:
 - Improved the quality and volume of produce packed
 - Increased transportation efficiency through larger volumes
 - Increased marketing area of produce and aquaculture products
- Allowed for a “weeding out” period for members. Growers learned what worked and what didn’t work. The poorer growers left the co-op and the co-op is now operating with 10 farmers that are willing and able to produce quality produce.
- Expanded produce variety making the co-op more appealing to produce buyers.
- ADF assisted growers in getting through the 3-4 year start-up cycle for their business.

- ADB funds to the Kentucky West Nursery increased the co-op's lending power and allowed them to expand much faster than a self financed start-up business.
- There are three to four times more fish farmers and three times the acres of catfish now than before PAAC.
- Kentucky aquaculture had to try and ultimately fail at a catfish processing facility in order to move past the idea and toward the live markets that have a greater chance of success.
- Approximately 75% to 80% of growers that were co-op members for at least two years are still growing vegetables.

As would be expected, there were many complaints regarding how the ADB handled the co-ops. Each of the co-ops that went out of business or significantly changed, did so for different reasons. Each co-op had strengths and weaknesses. There was no one factor that led to the co-ops ceasing operations. The following comments were also made by the co-op members interviewed:

- Forgivable loan program did not work. This created a tax problem as when forgiveness was met, the loan was considered income.
- County ADB funds were turned into a forgivable loan when they were intended as grant funds.
- Sometimes, the funds were too easy to get. If we had to go to a bank for the funds, then we would have been more likely to develop a more realistic business plan.
- Because the ADB wanted the co-op to expand into many counties, we were forced to work with inexperienced growers that should not have been growing vegetables. This dragged the entire co-op down.
- The ADB's lack of knowledge of the vegetable market meant that they instilled unrealistic expectations. Some co-op members reported that GOAP staff dictated what goals the co-ops should include on their ADF forgivable loan application forms. These goals were often unrealistic for the businesses and were consequently not met.
- The overall time frame from co-op start-up to shut down was too short to work out the problems and achieve success.
- Non-funding of the state's pond cost share program directly impacted the co-op's ability to provide enough catfish for continued operations. Co-op believed that these funds were originally promised to them, but those promises were not kept.
- Member production was expanded, but the ADB funds for the needed processing equipment were not received in a timely manner. This resulted in product being sent to a landfill and members suffered "considerable losses".

After interviews with former and current co-op management and the co-op expert panel, the UK Team identified the following lessons from the ADB funding of the co-ops:

- The ABD was willing to invest funds when the members were not. When the co-ops had tough business decisions to make, decisions were made knowing that they would not be losing the member's investments. In some situations, co-op members believed that the ADF was really their money anyway and that the ADB had a responsibility to subsidize their business.

- The ADB was hesitant to fund personnel. Management was perhaps the main deficiency of many of the co-ops. Given the relatively small size of the businesses and their budgets, the co-op managers were expected to be plant managers, salesmen, financial officers and administrators. While each co-op had a manager that was qualified for one of these positions, none of them was qualified to successfully fulfill all of these roles. While the equipment purchased by the ADB was important for improved efficiencies of the businesses, without effective management even the most high-tech equipment cannot make sound business decisions. A complete copy of the Special Discussion of Farmer Marketing Cooperatives is included as Appendix D.

Added Value Processing

An important dimension of the ADF Priority #1, Marketing and Market Development, is value-added processing. The ADB has made 16 large and medium investments in projects which are primarily “value-added processing” ventures intended to support businesses and which will enhance Kentucky’s agricultural products and increase their value in the marketing chain (Table 30). On-farm and small firm value-added activities can increase farm income and diversification, while large-scale value-added businesses can produce jobs and related business activities which can potentially affect local and multi-county economies. Because value-added investments have the most potential to create jobs and associated economic activity, these investments most directly address the ADB goal of having an impact on tobacco dependent communities.

Table 30: *ADF value-added processing investments 2001–2006.*

Recipient	Project Description	Award	Year
Commonwealth Agri-energy	Ethanol Plant	\$9,311,000	2003
Little Kentucky Smokehouse	Ham Processing Expansion	\$1,950,000	2003
Lake Cumberland Milling	Grain Milling	\$1,165,000	2004
Owensboro Grain Company	Biodiesel Facility and Equipment	\$1,151,250	2006
Siemer Milling	Wheat-based Glue Extender Facility	\$1,000,000	2004
Knotwood Craftsmen Investments	Woodworking Facility and School	\$642,000	2005
Creech Services	Compost Production Expansion	\$618,309	2005
Christian County Grain	Specialty Grain Marketing	\$327,419	2001
Shuckman’s Restaurant Service	Smoked Fish Aquaculture Products	\$300,000	2002
In Town Winery	Winery Development (Equipment)	\$295,509	2003
Katelyn’s Honey	Value-added food products	\$293,850	2006
Kentucky State University Bee Project	Honey Extraction Facilities	\$292,750	2002
Equus Run Vineyards	Winery expansion	\$263,825	2001
Elmwood Stock Farm	On-Farm Compost Manufacturing	\$143,100	2001
Evans Orchard and Cider Mill	Apple Cider Processing	\$122,923	2001
Appalachian Sweet Sorghum Marketing	Sorghum Processing & Marketing Cooperative	\$100,000	2001
Total Awarded		\$17,976,935	

The ADB investments in value-added processing have included direct on-farm processing ventures like compost production (ESF Compost, LLC), apple cider production (Evans Orchard and Cider Mill, LLC), and wine production (Equus Run Winery). The compost production at ESF

Compost has not been successful, primarily because there is direct competition from the large-scale compost production at Creech Services (another ADB investment) in a neighboring county in which the forgiveness provision includes giving away compost to tobacco farmers. However, the modest investments in apple cider production have been a key component in the overall success of Evans Orchard and Cider Mill, which is both an on-farm processing facility serving eight orchards but also an agri-tourism business attracting hundreds of visitors each year.

The larger-scale ADB investments in value-added processing have, with only one exception, involved grain processing. This includes the largest award made by the ADB, over \$9 million to Commonwealth Agri-Energy for ethanol production; other investments in grain processing are: Siemer Milling (wheat-based glue extender), Christian County Grain, Inc. (specialty grain marketing), Lake Cumberland Milling (soybean meal production), Sorghum Marketing Association (sorghum syrup), and Owensboro Grain (soybean crushing for biodiesel production). The most successful project in terms of impact on farm income, local employment, and overall volume of production has been Commonwealth Agri-Energy. This plant was brought on-line just as the ethanol market was expanding and consequently it has been an aggressive buyer of corn, a successful producer of ethanol, and important employer in Hopkinsville. It has developed new value-added products like corn oil and wet feeds, which created a new market for Kentucky corn products. Since it was organized as a cooperative, the large patronage dividends (44 cents per bushel in 2006–07) has had an enormous positive impact on farm income.

Another very successful ADB investment in grain-based value-added was the new business created at Siemer Milling which processes low quality wheat into organic glue extender marketed to plywood and panel board manufacturers. Since Kentucky has experienced a problem with wheat quality, this investment enhances the value of low-quality wheat, creates new value-added production, and consequently has a large positive impact on farm income (approximately 12 cents per bushel in 2006–07).

The other investments in value-added grain processing have only been modestly successful. Lake Cumberland Milling, LLC is operating at less than full capacity and is finding it difficult to achieve the high-fat soybean meal production and marketing goals outlined in their proposal. Christian County Grain was slow to utilize the ADB award for improvements in their specialty grain marketing (white corn for snack chips, deer corn). Appalachian Sweet Sorghum Marketing Association involves only a few farmers and a small acreage, consequently the economic impact is low.

Owensboro Grain's biodiesel production facility received a large ADB investment of \$1.1 million and a KAFC (\$5 million) loan. At the time of the evaluation site visit, the production line was still under construction. Although this investment was predicated on the sluggish market for soybean oil resulting from consumer concerns about trans-fatty acids, the current market for soybean oil and soybean prices are at record high levels. Thus, the potential impact may be less than anticipated since the input (soybeans) will be at a higher cost level than predicted in the feasibility stage.

The ADB investment in Little Kentucky Smokehouse and Fresh Meal Solutions has had significant positive impact. Both of these businesses grew out of Jim David Meats and involve ham processing and fresh, microwave meals which are now being marketed in Kroger, Wal-Mart, and other retailers. These businesses are located in a rural part of Union County. Therefore the jobs

created (about 100) and the related economic activity (transportation, inputs, etc.) are having a significant positive impact on the local economy. In addition, Little Kentucky Smokehouse is a major buyer of Kentucky-produced pork, paying a premium for antibiotic-free hogs.

Two similarly successful but smaller scale projects are Katelyn's Honey, a food processing company in northern Kentucky, and Evans Orchard and Cider Mill in central Kentucky. Since both these ventures are located in expanding suburban markets, their economic activity will not have significant impact on the local economy. However, Katelyn's Honey is processing salsa, jams, sauces, apple butter and related products from Kentucky products and marketing them as private label products to a number of customers and the Rebekah Grace label. The value of the output is \$500,000 and growing. It is having an impact on farm income in the northern and central Kentucky area by buying locally-produced fruits and vegetables for value-added processing. Evans Orchard is a successful food processor and agri-tourism business that offers cider processing to apple producers in the central Kentucky area. This business is important to eight different apple growers because it allows them to market lower quality fruit as an value-added product (cider).

Two ADB investments in the wine industry are having significant positive impacts on Kentucky agriculture. Especially notable is the Equus Run Vineyard project, a full-service winery that has become a successful agri-tourism business. Equus Run is buying locally-produced grapes for their own wine production plus assisting other wine producers to create and market wines under their own private labels. The In-Town Winery is a modest wine production business in downtown Louisville which buys 100+ tons of grapes annually, of which 98% are grown by Kentucky producers.

Other value-added investments have had only modest impact on farm income and local economies. The KSU honey project, which provides leased trailers, honey extraction units, and education for beekeepers, is important in this era of declining pollination effectiveness due to hive deaths in the U.S. However, the impact on farm income has been modest since the 71,417 pounds of honey extracted at the twelve sites probably would have been processed anyway. Creech Services has built an efficient and large-scale compost production operation which is supplying a high-quality product to farmers in central Kentucky. The financial feasibility of this operation can only be proven over time, after producers field-test the product and analyze its impact on soil fertility and production. The ESF on-farm compost project is inactive due to competition from the Creech Services compost production, which gives away compost free as part of their forgivable loan agreement. Appalachian Sweet Sorghum is a project with admirable intentions but affects only 5 farmers and 30 acres of sorghum production.

Only one value-added investment has had no impact. The Knotwood Craftsmen project is no longer operational.

In summary, the \$18 million invested by the ADB in value-added processing projects represents the second largest component of the portfolio of large and medium investments. The ADB funds have been leveraged with over \$41 million in other funds (private equity, loans, etc.) for a leverage ratio of 1:2.2, representing a significant commitment of private capital in addition to the public funds used in these projects.

Based on the our survey results and further analysis, we estimate that the 16 large and medium value-added projects generate about \$5.7 million of additional farm income annually for Kentucky (Table

Table 31: *Estimated quantitative impact of value-added investments.*

No. of Projects	Award	Amount Lever-aged	Estimated Additional Annual Farm Income Generated	Farm Income Generated Per \$1 of ADF Investment	Tobacco Farmers Impacted	New or Expanded Markets
16	\$17,976,935	\$41,954,501	\$5,811,588	\$1.35	4,115	11

Value-added processing and related industries are a large portion of the Kentucky economy. While on-farm production agriculture generates about \$4 billion in cash receipts (about 3% of state gross product), the agricultural inputs, processing, and forestry sector generate over \$12 billion in economic activity, or about 11% of gross state product. Consequently, the \$18 million invested in value-added projects, and the resulting \$6 million in additional annual farm income, are small relative to the overall post-farm gate economy in Kentucky. However, it is reasonable to conclude that these investments have had a positive but marginal impact on the larger post-farm gate value-added economy in Kentucky. Certainly they have had a positive impact in local economies, especially some of the larger investments. When you consider the local economic impact, the expansion of new and existing markets, the jobs created and the number of tobacco farmers affected, the value-added investments have been effective use of the ADF.

Marketing and Promotion

The ADB has invested almost \$11 million in efforts designed to promote Kentucky agricultural and food products, a direct attempt to achieve improvements in marketing, which is one of the main priorities identified by the ADB. The bulk of these funds are involved in two major investments: (1) \$5.3 million grant awarded to the Kentucky Department of Agriculture and (2) \$4.9 million grant awarded to Allied Food Marketers West (Table 32). These resources have been used to promote and brand locally grown agricultural and food products in Kentucky under the “Kentucky Proud” campaign theme and to provide other marketing assistance directly to producers.

Table 32: *ADF marketing and promotion investments 2001–2006.*

Recipient	Project Description	Award	Year
Kentucky Dept. of Agriculture	Marketing and Promotion	\$5,329,300	2003 & 2006
Allied Food Marketers West	Agribusiness Incubator Development	\$4,891,561	2005 & 2006
Agri-tourism Interagency	Develop & promote agritourism in Kentucky	\$400,000	2006
Total Awarded		\$10,619,861	

An outside marketing consultant with considerable experience in state-branding research, Dr. Harry Kaiser of Cornell University, assisted the UK Evaluation Team in addressing three important issues regarding these marketing investments (Dr. Kaiser’s full report is contained in Appendix D):

1. How does the Kentucky marketing program compare to what other states are doing in terms of state branding and promotional efforts?
2. What evidence does existing research literature provide on the economic impacts of state promotional efforts similar to Kentucky Proud?
3. Based on the results of previous research, what are the economic impacts and returns to Kentucky Proud?

State Branding Programs—State-level marketing and promotion programs for agricultural and food products have become extremely popular in the United States. As of 2001, 43 states had adopted various forms of these branding programs. Several states had programs similar to Kentucky Proud, e.g., *Jersey Fresh, Grown in Georgia, Illinois Products, or Certified Product of Louisiana*.

There have been a number of studies about the economic impacts of state-level branding and promotion programs. The most comprehensive research effort was that conducted by Rutgers University of the “Jersey Fresh” program. Agricultural economists conducted several studies on the Jersey Fresh program, estimating in one study that this program increased the demand for New Jersey grown products by 5.5%. This study also estimated a rate of return to this program of 1 to 15.20 (every dollar invested in this program returned \$15.20 to farm income in the state). This estimated rate of return is clearly on the high side of what is typically estimated from other studies of generic advertising and promotion, but it does indicate that state branding can be an effective means to support state agricultural producers.

Wolfe and McKissick, from the University of Georgia, conducted a study on a \$100,000 promotional campaign for “Grown in Georgia.” This study relied on store-level data over a six-week period from a large chain supermarket. The authors compared produce sales from stores in Georgia (160 using the campaign) compared with stores in South Carolina (13 not using the campaign) and Alabama (3 not using the campaign). They found the campaign to be effective in increasing sales of Georgia produce. For instance, the Georgia stores experiences a 10% increase in total produce sales from 2000 to 2001 for the campaign period compared with only a 0.39% increase in South Carolina and Alabama. The authors estimated a benefit-cost ratio between 4.37 and 7.37 in terms of generating additional revenue to the stores due to the program.

A summary of the economic rates of return on various other studies of commodity generic advertising and promotional programs suggest a wide range of possible impacts. However, it seems clear from this published literature that state branding programs do have positive impacts in terms of increased sales for food and agricultural products.

Analysis of Kentucky Proud—The Kentucky Proud program has showed considerable growth in the last three years. As of December 2007 there were 1,035 Kentucky Proud members with approximately 300 members that had a retail product to sell.

The Kentucky Proud logo is becoming more visible and recognized by producers and consumers in Kentucky. KDA unified two different promotional logos into one more simplified design of Kentucky Proud. With assurance from KDA that they would not change the Kentucky Proud logo as long as the current Commissioner is in office, many more companies were willing to put the Kentucky Proud logo on their packaging. This resulted in the Kentucky Proud logo being more visible on products at the retail level. An independent consumer research study commissioned by KDA

found almost 40% percent consumer brand awareness of the Kentucky Proud logo in Louisville, Lexington and Northern Kentucky.

The membership criteria to be a Kentucky Proud Product does not require 100% Kentucky ingredients, but products do have to be made' in Kentucky. Besides farm impact, KDA considers the brand exposure benefits of a product as well. This second consideration is a significant change in the philosophy of Kentucky Proud from promoting strictly businesses that sell farm products raised locally to promoting food and agriculture products processed by larger corporate entities, such as Purdue Chicken and Dean Foods. The chickens and milk processed and sold by these companies include mostly Kentucky grown farm products. This has greatly increased the Kentucky Proud sales numbers and increased consumer brand exposure as well. Some farmers have been unhappy with the change, stating their 100% Kentucky grown/produced products have lost brand value by being associated with less than 100% Kentucky grown products now labeled Kentucky Proud.

KDA offers an advertising cost-share program which must be matched at least 1-to-1 by the retailer. This cost-share arrangement permits KDA to collect retail sales data. The total advertising cost-share dollars offered by KDA are figured at 3 cents per dollar of estimated Kentucky Proud products sales. Initially an estimate is made as to how much product will be sold as a result of the promotion. Based on that estimate an agreement is drawn up stating the sales expectation and the advertising money offered along with the reporting requirements. Quarterly reports of actual sales are required of the retailer in order to verify the sales of Kentucky Proud products. Based on the \$0.03 of advertising money per \$1 of KY Proud sales, the retailer is paid advertising cost-share.

KDA has retail sales figures for Kentucky Proud registered products that were sold by participating retailers. KDA has documented approximately \$37 million of Kentucky Proud products sold at participating retail grocery stores in 2007. Assuming 20% of the Kentucky Proud product sales were new sales as a result of the Kentucky Proud promotional effort, this produces an estimate of \$7.4 million in sales generated by the program in one year.

Analysis of Allied Food Marketers West (AFMW)—AFMW is a Louisville-based firm that received nearly \$5 million of ADF money for marketing support to Kentucky producers and for collaboration with KDA on the Kentucky Proud promotional effort. AFMW's main outreach effort was to provide technical assistance to new and existing Kentucky farm and food producers wanting to market their value-added products.

The estimated returns to technical assistance investments are typically less than returns from advertising and promotional programs. However, a lower return on investment does not mean the work is not needed or essential to get farm products into the market place. KDA personnel stated to the UK Evaluation Team that they were often frustrated by producers not being "retail ready" when a marketing contact was made. AFMW was envisioned to be an answer to this problem by being a source of focused individual help to get a producer's business ready and capable of marketing their products into the main stream marketing channels.

The UK Evaluation Team encountered serious issues in analyzing the actual work effort by AFMW. The AFMW project leaders were unwilling to give the Team functional breakdowns for the expenditures in "marketing research," "technical assistance," or even trade show and exhibitions. Thus, the UK Team and Dr. Kaiser had to make approximate allocations of AFMW expenditures based on very limited information and low confidence. During site visits and the Expert Group

meetings, Kentucky farmers and food producers across the state told us they have not felt they were receiving enough help from AFMW, particularly with logistic and transportation issues related to marketing their products. In addition, several producers raised numerous potential conflict-of-interest issues between the activities of AFMW and Rebekah Grace brands, a closely related food marketing entity. In several instances, Kentucky producers were told by AFMW that they had to use the Rebekah Grace packaging and label in order to receive any marketing assistance. When producers expressed reluctance, they reported to the Evaluation Team that AFMW discontinued assistance. In January, 2008, the UK Evaluation Team informed the GOAP about the problems with functional allocations of AFMW expenditures and the reported conflicts of interest.

AFMW claimed they helped market Kentucky Proud products worth \$4.1 million during the period 2005–2007. Unfortunately, the UK Evaluation Team could not verify the validity of the AFMW data. Cross-checking with participants resulted in widely varying estimates. Therefore, for purposes of the analysis of AFMW activities, we applied the same factor of 20% of sales being new sales generated by the promotional activity which resulted in an estimated \$820,000 in additional sales. Recognizing that AFMW was in the business of helping to bring new products to market that never existed before, perhaps 50% credit is more appropriate in this analysis. This would result in an estimated \$2 million of additional farm income generated during the three-year period, or about \$683,000 annually. Using the more generous figure of \$2 million in farm income generated, results in \$0.41 cents of farm income generated per \$1 of ADF investment.

Analyzing Economic Impact of Kentucky Proud—Three alternative approaches were used to estimate the probable economic impacts of the Kentucky Proud program, ultimately using data provided by the Kentucky Department of Agriculture and limited data from Allied Food Marketers West. It was difficult to fully categorize the Allied Marketers’ expenditure data due to incomplete explanations and overlapping expenditures.

Approach 1 is the most direct. This approach is based on the rate of return estimate that have been found for similar programs. Only two programs, Jersey Fresh and Grown in Georgia, have had studies that estimated their rates of return. Jersey Fresh had a very high rate of return estimated by Rutgers University economists, which was 15.2 in terms of farm income, and 46.9 for total impact on all agriculture and food sector. These estimates appear implausibly high, and therefore were not used in estimating the economic returns to Kentucky Proud.

The rate of return estimated for the Grown in Georgia program is 5.87 (average of 4.37 and 7.37). This is a gross return to grocery store revenue rather than farm revenue. In other words, every dollar invested in this program stimulated \$5.87 in grocery store gross revenue. Assuming an identical rate of return as estimated for the Georgia program implies that the total investment in the Kentucky marketing programs since 2004 (i.e., \$10.2 million in grants to the Kentucky Department of Agriculture and Allied Food Marketers West) generated \$60 million in additional gross sales revenue to the state. This estimate would amount to \$20 million in additional sales per year (2004–2006). One problem with this estimate is that it does not indicate how the state’s agricultural producers were impacted by the program. Hence, this is the least preferable estimate of the three approaches.

Approach 2 uses the results of a recent comprehensive study done by Global Insight, Inc. for the Foreign Agriculture Service of the U.S. Department of Agriculture. The particular focus of this study was the U.S. agricultural export promotion programs. The approach used by Global

Insight can be applied to the Kentucky Proud program because the collective activities in U.S. export promotion are very similar to those used by the Kentucky Department of Agriculture. One of the main purposes of U.S. export promotion programs is to brand U.S. agricultural and food commodities, this is precisely Kentucky Proud's purpose at the state-level. Furthermore, in this study, a broader benefit-cost ratio (i.e., rate of return) was computed that includes economy-wide effects of the promotion (e.g., agricultural and non-agricultural effects). Hence, this may be the best comparable rate of return for Kentucky Proud.

This study found a rate of return to the entire U.S. economy (agricultural and non-agricultural) from U.S. export promotion equal 1:5.2. That is, each dollar invested in U.S. export promotion returned \$5.20 in terms of total U.S. net economic welfare (net economic welfare can be interpreted as net benefits to the economy). Assuming an identical rate of return as that found for all U.S. export promotion program, would imply the Kentucky marketing programs generated \$53.1 million in economic benefit to the state of Kentucky since 2004.

In terms of impact on farm income, this study found a rate of return equal to 1:2.9. That is, every dollar invested in U.S. export promotion returned \$2.89 to cash income for farmers. Applying this figure to the Kentucky program implies that Kentucky Proud produced an additional \$29.54 million in farm cash receipts to the state (note that the \$29.5 million is included in the 53.1 million for the entire economy-wide impact). This estimate amounts to \$9.8 million per year in additional farm income (2004–2006).

Approach 3 relies on estimated rates of return for various marketing activities, and applies each of those to the same types of activities used in Kentucky Proud. In 13 different research studies, mostly on generic advertising and promotional activities, the average rate of return is 1:4.9, i.e., each dollar invested in generic advertising returns \$4.87 in farm revenue. Six studies on non-advertising promotional activities had an average rate of return of 1:2.7.

Based on these previous studies, an overall average rate of return for the Kentucky Proud marketing activities can be estimated by computing a weighted average of these rates of return, where the weights are equal to the expenditures on each of these activities. Based on the data provided by the Kentucky Department of Agriculture and less clearly defined data from Allied Food Marketers West, their expenditures were categorized by activity as follows:

Based on these budget percentages, the weighted average rate of return for the Kentucky Department of Agriculture using Approach 3 is 1:4.7. Based on these budget percentages, the weighted average rate of return for Allied Food Marketers West is 1:2.6. Based on these budget percentages, the weighted average rate of return for both organizations combined is 1:3.4. Using the 3.4 rate of return, would imply that the total investment in the Kentucky marketing programs since 2004 (i.e., \$10.2 million from the grants to the Kentucky Department of Agriculture and Allied Food Marketers West) generated \$34.7 million in additional farm income.

It seems reasonable to conclude that Kentucky Proud has had a positive and significant impact on both the agricultural and overall economy of Kentucky. In terms of economy-wide impacts, it was estimated that the total investment of \$10.2 million between 2004 and 2006 returned \$53.1 million. In terms of the agricultural sector, this investment returned \$29.5 million in farm income. Approach 3, which assumes similar returns as those found for generic advertising, promo-

Table 33: *Expenditures by activity for the Kentucky Department of Agriculture and Allied Food Marketers West.*

Kentucky Department of Agriculture	
Activity	Percent of Expenditures
Advertising	89.7%
Promotion	10.3%
Total	100%
Allied Food Marketers West	
Activity	Percent of Expenditures
Advertising	4.7%
Promotion	39.8%
Technical assistance	55.5%
Total	100%
Combined Programs	
Activity	Percent of Expenditures
Advertising	22.9%
Promotion	46.5%
Technical assistance	30.6%
Total	100%

tion, and technical assistance, indicates almost an identical number of \$34.7 million in additional farm income, or \$11.5 million annually.

The economic impact estimates from Approaches 1, 2, and 3, were cross-checked against sales data collected by the UK Evaluation Team from the ADB-funded projects, GOAP reports, Expert Group sessions, and individuals with first-hand information. Based on this information the farm income generated by both KDA with Kentucky Proud and Allied Food Marketers West was estimated to be \$8.8 million annually. With this additional information, it seems reasonable to conclude with some confidence that the combined marketing programs are having a very positive impact by generating from \$8 to \$12 million annually in additional farm and food sales.

Table 34: *Estimated quantitative impact of marketing and promotion investments.*

No. of Projects	Award	Amount Leveraged	Estimated Additional Annual Farm Income Generated	Farm Income Generated Per \$1 of ADF Investment	Tobacco Farmers Impacted	New or Expanded Markets
3	\$10,620,861	\$5,578,471	\$8,783,333	\$3.19	2,409	19

Education, Leadership, and Other Impacts

Several of the ADB projects targeted education, leadership, or other impacts that are important for the future of agriculture in Kentucky but do not have a short-term direct impact on farm income, sales, production, or marketing. Although it is not possible to assign a dollar value to the impacts of these types of projects, their goals remain consistent with the investment priorities of the Agricultural Development Board.

Fifteen large and medium non-model projects are included in this general area of education, leadership, and other impacts, accounting for a total investment of over \$11 million.

Table 35: *ADF education, leadership, and other investments 2001–2006.*

Recipient	Project Description	Award	Year(s)
Friends Of Kentucky 4-H	Youth Endowment Program	\$2,000,000	2001
Kentucky FFA Foundation	Youth Endowment Program	\$2,000,000	2001
UK Research Foundation	Entrepreneur Development	\$1,282,206	2003
KCARD	Center for Cooperative Development	\$1,250,460	2001 & 2003
KY Community and Technical College	Computers for Farmers - 2	\$1,155,000	2005
Buffalo Trace Area Development	Agricultural Revolving Loan Fund	\$1,000,000	2003
Kentucky Agriculture Heritage Center	Study and Design	\$1,000,000	2006
Community Ventures Corporation	Ag Micro-Loan Program	\$275,000	2002
Murray State University Foundation	Ag Diversification & Demonstration	\$257,995	2003
ApoImmune	Medical compounds from tobacco	\$255,000	2002
Kentucky Vo-Ag Teachers Association	State-wide Digital Ag Curriculum	\$250,000	2003
KentuckyVirtual.com	Internet Marketing	\$250,000	2001
KY Highlands Investment	Ag Micro-Loan Program	\$158,750	2002
UK KALP	Leadership Development Program	\$146,360	2006
Maysville Community and Technical College	Welding & Diesel Courses for Farmers	\$124,800	2006
Total Awarded		\$11,405,571	

The goals and impacts of these projects represent a wide range of approaches and subject areas. Including youth education, leadership development, entrepreneurship support, technical education for farmers, agricultural business support, and loan programs. Many of these projects represent unique approaches to increase knowledge and other support for those impacted by changes in the tobacco industry now and in the future. There are participation figures for most of these projects. Examples include:

- 24,000 Kentucky vocational agriculture students have been taught with updated curriculum
- 1,300 tobacco farmers received low-cost training in welding, computers, and diesel mechanics
- Over 9,000 youth have participated in youth educational activities
- 25 future agricultural leaders have completed a leadership course
- 40 business and community leaders have been educated as entrepreneurial coaches

Although the goals of these projects were not directly farm income related like many of the other project categories, Table 36 presents the summary information for direct impacts that could be documented. It should be noted that these fifteen projects leveraged over \$6 million in additional funding and had impacts on over 1,900 tobacco farmers.

Much of the leadership impact has occurred at the county level with the establishment of County Agricultural Development Councils and the administration of County Agricultural Development Fund projects. More results of leadership impacts related to the County Councils is included in the following section titled County Council and Leadership.

Table 36: *Estimated quantitative impact of education, leadership, and other investments.*

No. of Projects	Award	Amount Leveraged	Estimated Additional Annual Farm Income Generated	Farm Income Generated Per \$1 of ADF Investment	Tobacco Farmers Impacted	New or Expanded Markets
15	\$11,405,571	\$6,205,010	\$75,500	\$0.02	1,909	0

County Agricultural Development Councils and Leadership

House Bill 611 which established the Agricultural Development Fund stipulated that 65% of the Tobacco Settlement money devoted to agriculture would be available for state wide projects through the Agricultural Development Board. The other 35% of the MSA funds for agriculture would be sent to the 118 counties in Kentucky that had some history of tobacco production. The county money is dispersed by a County Agricultural Development Council established for that purpose in each of the counties. The make-up of the Council is dictated by statute to be composed of:

- 2 farmers selected by the county Farm Service Agency Committee
- 2 individuals selected by the county Conservation District Board
- 2 individuals selected by the county Extension Councils
- 2 young farmers selected by the other six Council members (age 21–40)
- County Extension Agents for Agriculture and Natural Resources were designated to staff the County Council, and County Extension offices to support Council operations

County Councils make recommendations to the ADB for allotting the county’s ADF money. They can recommend non-model project funding as well as model project funding.

In order to obtain a clearer picture of how the county non-model funds are being spent, the UK Evaluation Team chose a representative sample of fifteen counties across the state to visit and interview the County Councils. The sample was chosen with regard to geographic location, amount of non-model investments, type of non-model investments and tobacco production history. Figure 2 shows the location of the County Councils interviewed.

Project Site Visits

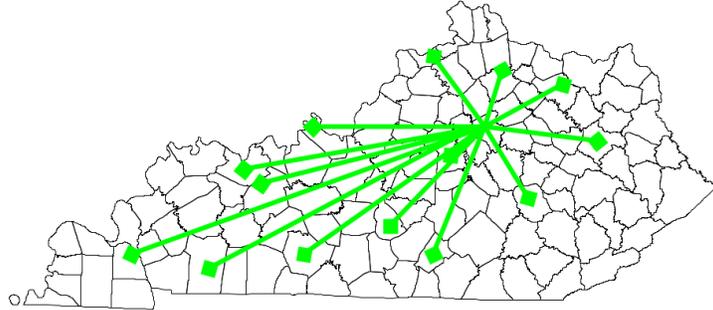


Figure 10: *County council visits.*

Survey Questionnaire—A standardized survey form was developed to guide the County Council interviews. The survey form is attached in Appendix A.

Site Visits and Interviews—Fifteen County Councils were interviewed separately across the state as well as County Agricultural Extension Agents in two different regional meetings.

The UK Evaluation Team met with the County Councils at their regularly called meetings or in a specially called meeting for the purpose of being interviewed for this evaluation. Both the County Extension Agent who works with the council (mostly the Agriculture and Natural Resources Agent but some Horticulture Agents) and the Council Members were interviewed as a group. All of the interviewed counties were active in ADF model programs and non-model programs as well. Each County Council was asked, “what have been the results of these investments in local agriculture”.

Analysis of County Council Interviews—Based on the site visits with County Councils and the interview/discussions, there are some general observations which can be made regarding leadership and education:

Leadership—County Council members were, for the most part, already in leadership roles or active in other agriculture related organizations before they became Council members. The nature of the appointment process assured that most if not all the council members were leaders in their local agricultural organizations. When asked if the Council members have assumed additional leadership roles as a result of serving on the County Council, most council members responded “no”. However, serving as a member of the County Agricultural Development Council has become an important leadership role in itself. Council members realize the importance of their positions, especially since the allocation of funds is involved. In addition, most County Council members are very conscientious in their service on the Council and participate regularly in Council meetings and other duties.

It seems clear that the council process has served to strengthen the relationships and to increase the understanding among the local agricultural organizations within most counties. Also,

because cost-share money from model programs was offered through various local agriculture organizations, this raised the farmer interest and participation level for local agriculture organizations such as the Cattlemen's Association.

Another leadership function for the County Agricultural Development Councils is the role of the County Extension Agents for Agriculture and Natural Resources in coordinating and staffing the Council, Council business, and activities. County Extension Agents also provide required educational programs and workshops, answer questions from farmers about program participation, and process program applications. In group interviews with County Extension Agents, it was estimated that they spend between 30% and 50% of their professional time on County Agricultural Development Council business and activities.

Education—The mandatory educational workshops necessary to participate in the model programs have facilitated a greater participation rate for farm focused extension programming than in the past. County Council members have stated they thought that educational programs offered along with the model cost-share programs have had a lasting impact by improving the farmer's production practices and the subsequent quality of their products.

Other general observations from the County Council interviews include:

- Cattle quality has been greatly improved with new sire genetics, improved livestock management techniques, and safer, more convenient cattle handling facilities.
- Hay and grain storage programs are permanent improvements that will continue to add to farm profitability into the future. Hay storage helped KY farmers weather the drought of 2007 by limiting the spoilage of the scarce hay available.
- The Ag Diversification program has provided a way to spread the opportunity to more of the farm community regardless of the type of enterprise the individual is involved with.
- County Councils across the state mostly have stuck to the scoring system as proposed by the ADB. Most councils award points for tobacco crop involvement, percentage of their gross income from farming and the person's farm experience.
- State-wide, the model program cost-share investments are the most visible local accomplishments of the ADF.

Interviews with UK County Extension Agents about County Councils—The Cooperative Extension Agents for Agriculture and Natural Resources play a key role in operation of the County Councils (and the entire ADF process). The UK Evaluation Team attended two different extension district staff meetings in order to survey UK County Agriculture Agents about county level ADF programs. After a short introduction on the research and ADF evaluation process under way, a survey form was handed out for the Agriculture Agents to complete before any discussions were held about the ADF programs. The surveys were completed before the discussion in order not to bias the participants with "group think" type conclusions. After the surveys were collected, a general discussion about the ADF County level programs ensued.

Extension Agent survey findings:

- On average, Agriculture Extension Agents report spending 30% to 50% of their professional time on ADF Programs.

- Extension office staff and resources are heavily used for Agriculture Development County Council business, i.e. ADF Model Program facilitation and oversight.
- Extension agents and staff are the primary contacts for the model program implementation. As such they field many questions about the ADF projects in particular, and about educational information needed to implement their project participation in general.
- Out of 37 Extension Agent surveys returned, 84% of the agents said “yes” the ADF has made a difference in agriculture in their county. Below is a ranked list of the most mentioned local impacts as noted by the agents.
 1. Infrastructure improvements—hay storage, grain storage, feed storage, fencing, cattle handling facilities
 2. Beef cattle enterprise improvements
 3. Better farm management
 4. Improved beef cattle genetics
 5. Cattle handling facilities (specifically mentioned)
 6. New enterprises started (diversification)
 7. Negative effects of developing a “farmer entitlement mentality” (i.e., wanting cost-share money to do any improvements)
 8. Improved profitability, brought new clients to extension programs, increased forage quality (all mentioned equally)

Analysis of County Non-Model Investments

A significant portion of the funds flowing to County Councils were used for “non-model” investments, as opposed to the menu-driven, cost-share “model programs” which are evaluated in Part II. Since this “county non-model” funding stream comprised 19% of the total funds flowing to County Councils, the UK Team examined how the County Councils allocated these “non-model” investments and their impacts. However, it is recognized that, generally, the County Councils have focused most of their attention on funding model programs that directly distributed cost-share funds to qualified farmers in their county.

Data Collection

Using data provided by the Governors Office of Agricultural Policy, the UK Evaluation Team constructed the following table to illustrate the County Non-Model spending results for the entire state. The table categorizes the projects by recipients or purpose.

Types of investments made in County Non-Model programs include: funds for model programs offered as a menu approach; funds for group marketing efforts or large processing facilities, education and youth development programs; Extension District construction projects for new facilities, county fair ground improvements, private business / agri-tourism ventures, field drainage tile cost-share programs, farmers’ markets and farmland preservation efforts.

Table 37: *County non-model program spending 2001–2006.*^a

	Dollars	Percent of County Non-Model Funds	No. of Projects
Menu Approach or Model Cost-share Programs	\$8,824,010	43%	97
Group Marketing and/or Large Processing Facilities	\$4,106,140	20%	181
Education and/or Youth Projects	\$1,814,084	9%	105
Other Projects	\$1,295,762	6%	44
County Fair Grounds Projects	\$893,779	4%	15
Field Drainage Tile Cost-share Programs	\$789,573	4%	9
Farmers' markets	\$676,441	3%	45
Shared Use Equipment	\$688,511	3%	52
Extension District New Construction Projects	\$684,500	3%	7
Private Business / Agri-tourism	\$650,833	3%	75
Farm Land Preservation	\$364,000	2%	2
Total County Non-model Funds	\$20,541,594	100%	638

^aCounty Non-Model Funds comprised 19% of the total \$107 Million Non-Model spending 2001–2006.

Types of Investments made in County Non-Model Programs

Model Programs—Forty-three percent of the County Non-model investment funds actually went onto model programs in the form of a “menu approach”. The menu approach is where qualified farmers choose which cost-share programs they would like to participate in up to the amount of funds they are allotted. This approach to funding county model programs was not available except under the non-model category. There were also some county specific cost share programs included in this category, (i.e: on-farm water development, precision agriculture technology, Farm Business Analysis and satellite internet access programs).

Group Marketing or Large Processing Facilities—The next largest spending category for County Non-Model funds was for projects that involved group marketing efforts or large scale processing ventures. There were 181 investments in this category comprising 20% of the funds or \$4.1 million. The large number of investments is not surprising, because this is a count of county investments. In many cases several counties made investments into the same large regional project. Examples of projects that received county non-model funds include produce marketing cooperatives, aquaculture processing or seed stock ventures, nursery production cooperative, bio-fuel manufacturing, specialty grain marketing, and grain value-added manufacturing. Almost all of these projects were funded in conjunction with state non-model project funds. The impacts of these projects have previously been analyzed in the state non-model sections of this report.

Education and Youth Development—Nine percent of the County Non-Model funds (approximately \$1.8 million), have gone into projects involving education or youth development. These projects typically were greenhouse or school farm projects at local high schools. There was, however, quite a range of educational endeavors funded, including support for Community College technical training related to agriculture, demonstration-farm ventures, heifer youth livestock programs, young farmer programs and youth Master Cattlemen classes.

Other Projects—The other projects category included county non-model funds to add to research on Mare Reproductive Loss Syndrome, a beekeeping initiative, a study on farm land preservation programs, debris removal after farmland was flooded, and a compost making facility.

County Fair Ground Improvements—Multi-purpose buildings for livestock showing and other events and livestock sales pavilions were the main projects funded under the county fair grounds category. Two of the projects totaled over \$100,000 each, with the remaining projects well under that.

Private Business / Agri-tourism Ventures—A wide variety of private businesses received some county non-model funds. These businesses were typically small, sole proprietary start-up companies involved in making value-added products such as jams, salsas, ice cream, wine, cider, BBQ and custom meats. A number of agri-tourism businesses received funds which they used to add a commercial kitchen to offer prepared foods to their customers.

Field Drainage—Tiling cost-share programs—Four counties funded field drainage tile cost-share programs; Daviess, Muhlenberg, Todd and Warren. Approximately \$790,000 was made available for field tiling cost-share.

Extension Districts—new facilities construction projects—Five counties invested Non-Model funds into new County Cooperative Extension Educational facilities including Anderson, Allen, Bath, Garrard and Jessamine. The other investments in this category involved educational field days.

Farmers' markets—Local farmers' markets were a popular place to invest county non-model funds. Nineteen permanent farmers' market pavilions were fully or partially funded with County Non-model funds, seven farmers' markets made improvements to their existing farmers' market site, seven received advertising funds and four purchased smaller items, like shade tents for booths, scales to weigh produce, etc. The remaining projects funded were for organizational and start-up costs for new farmers' markets being organized. Most of the farmers' market county non-model spending went hand in hand with some state non-model funds to carry out improvements.

The UK Evaluation team conducted a mail survey of KY farmers' markets that received some ADF funds in order to gauge the possible impacts for the funding. Looking at typical farmers' markets in the survey and using the nine markets that disclosed their annual sales figures an estimate of \$0.84 in annual sales were generated for each ADF dollar received. More farmers' market impact information is discussed in this report under the market development section. Also a complete report on ADF funded farmers' markets is included in the appendix.

Shared Use Equipment—Specialized farm equipment that many farmers could not afford or justify owning were purchased and rented on an as-needed basis to farmers in the county. Typically, these are no-till pasture renovation drills, hay and silage bale wrappers, lime and fertilizer buggies, cattle scales, portable squeeze chutes and corral panels.

Farmland Preservation Efforts—Shelby and Clark Counties funded studies to assess the potential to establish farmland preservation programs. Fayette County was the only county to put county non-model funds into an active program to purchase farm development rights. During the 2001–2006 period, Fayette County spent \$350,000 of non-model funds for this purpose.

Impacts of County Non-Model Investments

To better understand the impacts of the county non-model investments, the UK Evaluation Team interviewed fifteen County Councils and the respective County Cooperative extension personnel who assist them. The following table shows the types of non-model investments made by the fifteen County Councils interviewed.

Table 38: *ADF county non-model investments for 15 county sample.*

	Total (in hundreds of thousands)	Percent of Total	Number of Counties	Number of investments
Model Programs	\$2,093	42%	6	11
Marketing Initiatives, Processing Facilities	\$800	16%	9	17
Field Tiling Cost-share	\$737	15%	2	4
Youth Ag Programs	\$567	11%	15	27
Farmland Preservation	\$350	7%	1	1
Private Business Ventures	\$183	4%	6	12
Fair Barn/Livestock Show Facility	\$132	3%	3	3
Farmers Markets	\$94	2%	9	13
Other	\$28	1%	3	5
County Non-Model Investments Total	\$4,985	100%	15	103

The investment categories and the proportion of investment in each is roughly the same as the state wide non-model results. The field tiling cost-share and the farm land preservation categories are over-stated due to the coincidence that the two largest investors in field tiling programs and the largest funder of farm land preservation were included in the fifteen county sample.

Evidence of Impacts

When County Council members were asked to identify specific impacts of the non-model investments in their county, the following examples were mentioned:

- The Wilderness Trail livestock facility has made the local stockyards more competitive
- Local Farmers’ markets have been a good investment; more members and greater sales volume
- The Ethanol Plant increased farmer co-op member profits

- Siemer Milling created a market for all wheat (even lower quality)
- Technology cost-share programs have been very popular
- Field tiling made the difference between 75 bushel corn and 150 bushel corn
- The tiling program is a success with long term benefits
- County non-model funds given to Owensboro Grain for bio-diesel plant have resulted in a new production capacity but we cannot buy any bio-diesel locally. It all gets shipped overseas.
- Livestock facilities we funded are widely used by diverse groups
- Farmers' markets have been a big success
- There have been more educational programs in our county

Conclusions and Recommendations Regarding Non-Model ADF Investments

1. The ADF investments in Non-Model Projects have had a significant positive impact on agriculture and agribusiness in Kentucky. The \$86 million invested in the state non-model projects has resulted in an estimated \$161 million in additional farm income over the period 2000–2007, created or expanded markets for 148 products, generated about 1,300 new jobs, and impacted 50,000 tobacco farmers and over 100,000 youth. Thus, in large measure, the ADF investments have contributed to the overall goals contained in the ADB investment philosophy and long-term plan priorities.
2. On average, every dollar invested from the ADF in state non-model projects resulted in an estimated \$1.87 of additional farm income, with the small projects having the largest return—\$3 of new farm income per \$1 invested. In terms of key sectors in agriculture, the additional income generated was highest for investments in marketing and promotion (\$3.19:\$1) and livestock (\$3.15:\$1). Project participants leveraged \$96 million in additional funding for their projects, substantially more than the awards received from the ADF (\$86 million).
3. With regard to Marketing and Market Development, the investments in state non-model projects have clearly helped:
 - create new markets for Kentucky agricultural products, e.g., low quality wheat for industrial glues; hogs for naturally cured hams, out-of-state markets for PVP cattle, native seeds, and nursery crops;
 - expand existing markets, including Kentucky Proud identified products, apples for cider, CPH-45 feeder cattle, direct meat marketing, quality hay; and
 - develop new products including ethanol, wines, bottled milk, native seeds, salsa / sauces / relishes / jams, livestock mineral supplements, romaine lettuce, aquaculture seed stock. These positive market development impacts occurred across large, medium, and small investments.

4. The non-model investments have been successful in affecting tobacco farmers and a few tobacco-dependent communities. Approximately 50,000 tobacco farmers have been impacted by these investments, with the most impact coming from the investments in the Beef Network and the Horticulture Council. The non-model investments have had some positive impacts in selected tobacco-impacted communities, primarily in western Kentucky. However, there have been negligible impacts in northeast and eastern Kentucky communities where traditional burley production has declined in economic impact.

Recommendation: GOAP should encourage project proposals from regions where there has been relatively little ADF investment but where there exists potential for agriculturally-based ventures.

Recommendation: GOAP should encourage community-based economic development proposals focused on new ventures and job creation in tobacco-impacted communities in northeastern and eastern Kentucky.

5. The non-model investments have created jobs and affected youth in rural Kentucky. However, these investments have only been modest generators of new jobs, resulting in about 1,300 new jobs of all types (seasonal, part-time, full-time) over the study period. The large projects created the most full-time jobs (255) and the small projects created the most jobs of all types (712). However, the impact on youth has been broad with over 100,000 young people being affected, primarily by the Education and Leadership projects.
6. The ADF investments in “comprehensive approaches” which combined education, technical assistance, infrastructure improvements, marketing, and cost-share financing (with Model and Non-Model funds) have been effective and have produced broad positive impacts across key sectors of the agricultural economy, e.g., Horticulture Council, Beef Network.
7. For the large projects, 11 out of 31 investments have accomplished all goals with clear, documented evidence of positive impacts. For the medium projects, 9 out of 33 have accomplished all goals with clear, documented evidence of positive impacts. As would be expected in venture capital financing, there are “low performing or non-performing” investments. Nine of the large projects, representing \$16.7 million or 25% of total investments have serious performance issues. For the medium projects, 12 of 33 are low performing or non-performing, representing \$2.6 million or 33% of total investment.

Recommendation: The ADB should continue to fund risky new ventures which stimulate new markets, expand the value chain, and encourage in-state value-added processing.

Recommendation: The ADB should carefully examine the low-performing and nonperforming projects to determine the factors which have impeded achievement of goals and intended impacts.

8. The “failure” of some earlier investments (e.g., aquaculture co-ops, vegetable marketing co-ops) still resulted in advancements in new enterprises, new on-farm technology, continuing production of alternative crops, and contract marketing opportunities. It appears that emphasizing infrastructure expansion without comparable investment in management and training over the long-term may have doomed certain investments.

Recommendation: The ADB should establish practical, even if lengthy, timelines for project implementation with reasonable investment in management and training, if needed, to improve long-run project viability.

9. The non-model projects have had broad impacts across key sectors of the agricultural economy, including livestock, horticulture, value-added, marketing and promotion, and education and leadership:

- The \$18 million invested in livestock projects has resulted in an estimated additional livestock income of \$16 million per year, primarily through improved basis for Kentucky cattle, expanded CPH-45 feeder calf sales, new PVP cattle sales, improved direct marketing of meats, and an emerging aquaculture sector;
- The \$23.6 million invested in horticulture-related projects is generating an estimated additional \$5–6 million in farm income per year (a 24% return on ADF invested funds) and the comprehensive “package” approach (education, technical assistance, new technology, marketing, and advertising) accounts for about 50% of the annual growth in horticulture sales (8% per year);
- The \$18 million invested in value-added processing has leveraged an additional \$41 million in private investment, resulting in approximately \$5.7 million in farm income per year, an impact which is likely to increase as newer projects come in full production. The largest impacts have been in grain processing, ham processing, and wine production;
- Over \$10 million has been invested in marketing and promotion, primarily through two large projects. The Kentucky Proud state-branding program is among the most successful in the nation, generating an estimated additional \$7.8 million in farm income annually. The private sector marketing technical assistance had a more modest impact (about \$833,000 per year) but the combined impact of the marketing projects was positive: about \$3.19 of farm income generated per \$1 invested;
- The \$11 million invested in Education and Leadership Projects had modest impacts on farm income but positive impacts on the youth and farmers participating in the programs.

Recommendation: To continue the progress on improving marketing and market development, the ADB should seek a private sector-based partner

to collaborate with the Kentucky Department of Agriculture on supplying marketing assistance to small agricultural entrepreneurs.

Recommendation: The 5% of total funds invested in small projects should be increased since small projects with specific scopes and objectives have had high payoff.

10. It appears that earlier ADB investments were riskier, involving more nontraditional venture capital projects, compared to the more recent ADB investments. There are also significant differences in the amount of risk reduction offered to new ventures by the ADB versus KAFC (i.e., the forgivable ADF loans offer far more risk reduction than KAFC loans).

Recommendation: Seek collaboration between the Boards and staff of ADB and KAFC in providing coordinated financial assistance for new ventures which reduces risk through a blended strategy of grant and loan funding.

11. The non-model project reporting system (Semi-Annual Fiscal Reports, Annual Reports) is comprehensive in its expectations, but the GOAP appears to lack the staff necessary to properly utilize information from these reports or monitor the performance of all projects. Relatively too much staff time may be involved in feasibility analysis versus project monitoring. While forgivable loan repayments are tracked, there is insufficient attention paid to project reports submitted to GOAP, impact assessment, and post-award relationships with recipients.

Recommendation: GOAP staff should more carefully track and respond to fiscal and progress reports as part of routine, regular monitoring of award recipients in order to improve credibility of the reporting system and improve information management.

Recommendation: Site visits by GOAP staff and ADB board members should become a normal part of annual project monitoring and review in order for ADB to assess strategies and investment performance.

Recommendation: GOAP should contract with an outside entity for a major impact evaluation on a triennial basis.

12. There have been a few serious issues in program administration: (a) The large investment in private sector marketing assistance failed to fully accomplish its goals, proved to be a high cost project for the few successful ventures, and resulted in numerous conflicts of interest; (b) terms and conditions of “forgiveable loans” have lacked consistency and transparency for recipients; (c) there have been a few awards that created competitive projects in the same geographic region, resulting in negative interactions (e.g., compost in central Kentucky, grain processing in Christian County); and (d) there seems to be no coordination between ADB non-model project financing and KAFC loan financing.

Recommendation: Along with improved project monitoring, the ADB needs a clear policy on conflicts of interest for award recipients and needs to avoid competitive projects where possible. Recommendation: ADB needs to rationalize the provisions of the forgivable loan feature of project funding in order to provide more consistency and transparency.

Recommendation: The ADB and KAFC boards need to investigate opportunities for collaboration and mutual support in pursuit of the overall ADF goals.

Part II: County Model Investments

Introduction

By its nature the county model program offers relatively small investments (averaging \$1,387 per participant) for traditional and diverse farming practices. Approximately \$100,000,000 was invested by the Agricultural Development Board (ADB) in model programs representing more than 72,000 individual investments. Producers invested at least an equal amount to that invested by the ADB and in most cases much more than the required 50% match. Therefore, total combined investments in model programs exceed \$200,000,000. However, exact figures were not available for this report. Some of the investments by producers include the purchase of other farm products from local producers and the purchase of equipment and supplies from local dealers. Therefore, most of the investments help to stimulate the local economy, substantially increasing the actual benefits beyond the initial investments. Most of these investments will continue to provide benefits well beyond the initial benefits stated in this report. Average investments by participants for specific programs above the required match will be reported below, where available.

Not all counties offered all programs; however, most producers are diversified and can usually find other programs in which they can participate. During a personal communication with a swine producer, the producer indicated that the swine program was not offered in his county. However, he felt that the county council was justified in not offering that program, since he is the only commercial swine producer in that county. He was able to participate in other programs.

This county model program evaluation is divided into four groups:

- Major Model Programs
- Diversification Programs
- Other Model Programs
- Shared Use Equipment Program

Major model programs include the top four programs in terms of money invested:

- Forage Improvement and Utilization
- Cattle Genetics Improvement
- Cattle Handling Facilities
- Hay, Straw, and Commodity Storage

These top four programs represent 78% of total county model program participants and account for 72% of the money invested. Investments averaged \$1,284 per participant (Table 39).

Diversification programs were designed to encourage diversification of farming operations. One program, Agricultural Diversification, is further subdivided into 13 investment areas. They include:

- Agri-tourism
- Commercial Aquaculture Production
- Certified/Commercial Kitchen Construction or Renovation
- Direct-to-Consumer Livestock Production
- Equine Production
- Commercial Fruit and Sweet Sorghum Production
- Greenhouse Construction or Conversion for Horticultural Enterprises
- Small Animal Production
 - Honeybees
 - Rabbits
- Production of Commercial Ornamental Horticultural Products
- Poultry Production - Pastured/Other Fowl
- Commercial Vegetable, Mushroom and Herb Production
- Sod Production

Four other diversification programs are administered under separate program headings:

- Commercial Poultry
- Dairy Diversification
- Goat and Sheep Diversification
- Swine Diversification

Diversification programs utilized \$16,561,283 (17%) of the total investments in county model programs with 10,069 (14%) participants averaging \$1,645 per cost-share program.

The remaining four “other model programs” are:

- Farm Livestock Fencing Improvement
- On-farm Water Enhancement
- Technology
- Timber Production, Utilization and Marketing

These four programs accounted for \$11,232,926 (11%) in expenditures for 6,044 participants (8%) with cost-share projects averaging \$1,859 per award.

The Shared-use Equipment Program is significantly different from other county model programs, because it is designed to benefit multiple producers by providing equipment for loan. Benefits may include access to previously inaccessible land, improved crop stands, performance, and efficiency. Counties reported the loan fee for shared-use equipment has generated enough revenue to

Table 39: *Model Programs Statistics, 2001–2007.*

	Investments	Participants	Average/ Participant	Investment Distribution	Rank	Participant Distribution	Rank	Counties
Forage Improvement and Utilization	\$21,467,255	17,496	\$1,226	21.52%	1	24.25%	1	103
Cattle-Handling Facilities	\$19,516,463	15,073	\$1,294	19.57%	2	20.89%	3	101
Cattle Genetics Improvement	\$11,910,751	16,602	\$717	11.94%	4	23.01%	2	104
Hay, Straw, and Commodity Storage	\$19,061,126	6,867	\$2,775	19.11%	3	9.52%	4	99
Diversification Programs								
Agricultural Diversification	\$11,840,156	5,312	\$2,228	11.87%	5	7.36%	5	97
Commercial Poultry Diversification	\$114,783	35	\$3,279	0.12%	11	0.05%	11	4
Dairy Diversification	\$1,235,060	411	\$3,250	1.24%	9	0.57%	10	29
Goat and Sheep Diversification	\$3,323,766	4,294	\$774	3.33%	7	5.95%	7	89
Swine Diversification	\$47,516	17	\$2,795	0.05%	13	0.02%	13	8
Other Programs								
Farm Livestock Fencing Improvement	\$8,813,429	4,674	\$1,885	8.84%	6	6.48%	6	67
On-Farm Water Enhancement	\$1,477,187	771	\$1,915	1.48%	8	1.07%	8	23
Technology	\$832,142	563	\$1,478	0.83%	10	0.78%	9	28
Timber Production and Marketing	\$110,165	36	\$3,060	0.11%	12	0.05%	11	7
Total	\$99,749,805	72,151	\$1,386					

maintain equipment, replace the original equipment, or purchase additional shared-use equipment. Producers who borrow or rent the equipment are able to achieve similar results to larger producers who can justify the cost of efficient equipment.

Analysis

Data originated from model program reports from producer and were submitted electronically with assistance from county agricultural agents and administrators. Reports were filed with the Governors Office of Agricultural Policy (GOAP) by county administrators. Representatives from GOAP generated databases in Microsoft Excel with columnar headings for reported items or answers to questions. The model program review team solicited databases for each model program from GOAP for analysis. Databases were not inclusive of all cost-share items. Reports were not required initially by ADB, and therefore baseline production data were not established. Additionally, reports do not represent all cost-share participation. Available data were considered to be subsets and a representative sample of all projects for the purposes of this analysis. Databases with fewer than seven reports were considered too small for accurate interpretation and inferences were not made from that data.

For this report, a participant represented a single farm or farmer that participated in a specific program. A producer or farm may have participated in a single program multiple times or in one or more programs (there are limitations imposed at the state and county levels regarding participation in specific programs). A central theme at the county level has been to distribute available funds to as many producers as possible. County guidelines tend to be stricter than state guidelines, but counties cannot exceed maximum limits imposed at the state level. Participant responses to certain questions on program reports were thought to be artificially skewed due to prior participation in the county model programs. Reporting forms contain many questions that require participants to interpret the question. Dropdown menus on reporting spreadsheets might eliminate varied and difficult to interpret responses.

Attempts were made to resolve all data issues. Data issues included:

- duplicate data
- data listed under the wrong heading
- databases with some data points misaligned with headings
- data listed as a range rather than a specific number (e.g. 50-70)
- data with a plus (e.g. 50+) or other qualifier (e.g. give or take, millions, M, K)
- data reported on the wrong form
- data provided in the wrong database
- data reported in different units under a single heading

Databases from the four major model programs and some other programs were extensive and required many hours to resolve data issues before analysis. Databases for programs with less participation required an average of two hours of preparation prior to evaluation. All data issues that could not be resolved were dropped from the analysis. All duplicate data were removed. Data listed under the wrong headings were shifted into the correct column, if the appropriate column could be determined with 100% certainty. In some cases entire blocks of data were shifted into the appropriate column. In these cases, multiple columns of data were compared before the data sets were moved. Data listed as a range (e.g. 40–70 lbs) by producers were converted to a quantitative number by averaging the range. In the example given, an average of the range would be 55.

The county model program reporting forms utilize spreadsheets for ease of reporting. These forms have questions that require the input of financial data. Cells under such questions were commonly formatted in the reporting forms as financial data. However, the financial format displays cells with a “\$” sign at the far left of each cell and a “-” at the far right. Unfortunately, cells left blank are analyzed by Excels statistical functions as a “0”. If these cells were not removed manually the resulting averages were artificially low due to averaging 0s in with actual data. The currency format does not represent data as a “0” when using statistical functions and should be used in place of the financial formatting for ease of analysis. Reconciling these types of data issues required reformatting large amounts of data or deleting all occurrences of the missing data so that 0s would not be averaged in with actual data.

In most cases, data reported on the wrong form was non-usable and was discarded. For example, record management software purchased through the technology program was reported on the precision agriculture reporting form in some cases and could not be reconciled. Data provided in the wrong database were checked to see if it matched reports in the correct database. If a match could be made, the report was moved to the correct database. If a match could not be made, the data were dropped from the analysis. Care was taken to ensure that data imported to a database were not a duplicate of data already in the database.

Attempts were made to reconcile production data reported in multiple units. Reconciling data from multiple types of cropping systems was seldom successful. For example, production levels reported under the commercial fruit and sweet sorghum investment area of the agricultural diversification program contained several different units and crops, rendering analysis unproductive. However, production data from a single crop where data were listed in multiple units were normalized where possible. For example, honey data were reported in gallons, pounds and cases. Data were normalized to pounds by converting gallons and cases to pounds using standard conversion factors.

Expert Groups: Focus Group, Ag Agent Group, Specialists

In this part of the ADB evaluation effort, there were three different Expert Group meetings to analyze performance and discuss implications (specific information on each is included in the appendices):

- **Focus Group**—To evaluate the impact of the major model programs and to examine suitability of questions on reporting forms, an expert focus group was assembled that included county council members, producers, Extension agricultural agents, University of Kentucky Extension Specialists and Associates, and Kentucky State University Specialists. Following introductions, each attendee was given a booklet containing the reporting questions for each model program or investment area. Statistics and data for each major model program were examined and reviewed by the group (data for other model programs were not available at that time). Thoughts, suggestions, and recommendations were recorded and booklets with group members comments were collected for review. Focus group suggestions were incorporated, where appropriate, in this document.
- **Agricultural Extension Agent Group**—An agricultural agents group meeting was called on September 8, 2008 to further evaluate the reporting system and the questions asked on reporting forms. Agents were selected based on experience and their county's participation in model programs.
- **Expert Interviews and Consultations**—Data generated from analysis of various model program reports were shown to experts for interpretation and evaluation of benefit. Experts are recognized for their contribution where appropriate. Many agents were also consulted on various aspects of the model programs data.

Data Collection and Reporting—Conclusions and Recommendations

A central theme from focus group participants was the need to streamline the reporting system to improve future impact assessment, reduce producer burden, and reduce administrative demand for logging data. A main concept of the Agricultural Development Program (ADP) is to improve producer efficiency and record keeping. Streamlining the reporting system fits that premise. Although initial report forms were designed to generate baseline data, some responses to questions confirm what we already know, do not generate the responses expected, may be easily misinterpreted by those filling out the forms, or may generate such a wide range of responses that tabulation is impossible. Since reports came after the initial launch of the ADF, producers reporting previous practices may indicate an improved practice rather than a practice used prior to availability of ADF. This skews data upward, reducing the ability to assess actual impact. At this point there is no longer a need to generate baseline data from the reporting system. However, there is a need to fine-tune questions to improve impact assessment and to eliminate questions that do not generate useful data.

The social security and tax identification numbers listed on report forms pose security issues and should not be requested. This issue was raised on several occasions by focus groups and

individuals. Reports of identity theft are prevalent and participants have concerns about providing their personal ID numbers. Producers provide their tax ID at other times, which should be sufficient for tax purposes.

Some common questions included on most reporting forms may provide little benefit. Some questions (such as farm size) appear in all reports and generate averages that are expected, but are not useful for assessing cost-share benefit. Focus group members felt that asking the farm size did not add to the report and could be eliminated to streamline reporting. Although most cost-share programs asked the number of acres in the farm, not all did. Inclusion of data from a large farm on a database containing mostly smaller farms can skew acreage data to an unrealistically high average.

Participants are asked if they would have invested without cost-share support, but there is no indication if those that answered yes would have invested at the same level as they did with the cost-share funds. The high positive responses to this question were suspect due to producer perception that a positive response would indicate commitment to the project.

Answers to questions regarding production levels and yields were often too variable and reported in varying units. Such data were difficult, if not impossible, to analyze. Before and after questions on reporting forms should occur together so that comparisons during analysis are easier. Following a question with a fill-in-the-blank area tends to leave too much room for individual interpretation and inconsistent data. Multiple choice answers are encouraged where possible to indicate the range of answers sought. Dropdown menus for questions with multiple options would help improve recording efficiency in Microsoft spreadsheets. This would generate uniform answers, reducing errors that interfere with analysis, such as spelling errors or variable forms of the same answer. Reports often contained data reported in multiple units. Some indication as to the unit of measure expected for each question would improve data consistency and therefore analysis results.

Major Model Programs

The ADB established county model programs upon recognition of significant trends among initial county applications for ADF. Model programs promote efficiency, decrease “red tape”, and develop leadership capacity within local organizations that assume responsibility for program administration. State guidelines establish consistency and funding standards within counties distributing funds to address statewide needs in identified investment areas.

To date, 14 county model programs have been launched and remain available. The first county model program began in March 2001 with producers participating in Cattle Genetics Improvement. Farmers participating in the program are required to provide at least a dollar-for-dollar match, thereby leveraging agricultural development funds by 100% or more. Another model program, Agricultural Diversification, is further subdivided into 13 investment areas. Nearly \$100 million of ADF have been invested into county model programs through 2007. From these 14 model programs, four have emerged as “major” model programs. They represent 72% of model program investments and 78% of model program participants. All are based on the livestock industry and the forage/feed foundation upon which the industry relies. The level of investment should

come as no surprise, as livestock represented 64% of Kentucky's agricultural cash receipts in 2001 (68% in 2006, Kentucky Agricultural Statistics and Annual Report data).

Each major program was examined separately. The program goals were revisited; program impacts and adherence to ADB investment objectives were evaluated; and conclusions and recommendations, including changes to future reporting requirements, were provided.

Table 40: Major model program investments and participants.

Program	Investment	Participants
Cattle Genetics Improvement	\$12 Million	16,602
Cattle Handling Facilities	\$19.5 Million	15,073
Forage Improvement and Utilization	\$21.5 Million	17,496
Hay, Straw, and Commodity Storage	\$19 Million	6,867

Forage Improvement and Utilization Program

(Established March 2001, Updated November 2007)

Eligible Cost-share Items—Forage/Pasture Development; pasture/grain improvement; filter fabric pads for heavy use areas; fence and water for rotational grazing systems; subsurface drainage; custom seeding and seeding equipment rental.

Program Goals—Improve net farm income through improved forage quality, quantity, and efficient use; encourage science-based decisions on forage management and forage resource development on the farm; impact a high number of forage producers; change producer attitudes about forage management.

The ADB expected eligible cost-share items to accomplish several objectives:

- Decrease production costs associated with fungal endophyte in tall fescue
- Improve forage establishment practices
- Increase use of certified, plant variety protected, and proprietary forage varieties
- Provide essential nutrients for pasture and grain crops based upon nutrient management plans to save money and protect water quality
- Decrease losses due to mud and outside hay storage
- Enhance hay utilization
- Improve pasture utilization through rotational grazing
- Improve soil drainage to accommodate higher quality forage/feed production
- Facilitate custom seeding if needed for forage/grain crop improvement

Analysis of Impact—Investments in Forage Improvement and Utilization (forage program) adhere to several ADB objectives. The significance of livestock revenue to Kentucky's agricultural cash receipts has been stated. Forage and feed crops are the foundation of Kentucky's livestock industry. Improvement and enhanced utilization of these resources build competitiveness in a firmly established agricultural sector. Participation also allows producers to access emerging (cash hay) and value-added (Certified Preconditioned for Health, CPH-45) markets.

Seventeen thousand four hundred ninety-six producers have participated in the forage program—more than any other model program. Reflective of Kentucky's status as the largest cattle-producing state east of the Mississippi River, a significant number (89%) produce beef cattle. Since nearly 70% of beef cattle producers raise(d) tobacco (Burris, Laurent, Bertram, Absher), the program may benefit over 10,000 tobacco producers by improving net farm income in an enterprise other than tobacco. Interestingly, the data indicate beef producers participating in the program have herds that average twice the state average herd size.

Additional ADB investment objectives are addressed by the forage program. Local leadership capacity is enhanced within the organizations accepting responsibility for administering program funds. Environmental stewardship is promoted through establishment and maintenance of vigorous, healthy forage crops, which control soil erosion and reduce runoff pollution of surface and ground water. The program also provides educational opportunities for Kentucky producers through orientation sessions and demonstrations facilitated by the Cooperative Extension Service (CES).

Economic impacts of the forage program can be estimated in several areas. More precise evaluation should be possible in the future if recommendations for reporting improvements are incorporated. Because the evaluation is based on limited data obtained after the program had been in operation, it reflects a “snapshot” of overall program impact.

As described in the introduction to model investments, there is ample reason to believe some responses may be skewed due to prior program participation. For example, more than half provided information from soil tests; however, according to UK College of Agriculture specialists, less than 10% of Kentucky forage land is soil tested (Lacefield, Henning, Smith).

Fortunately, this demonstrable practice change indicates another successful educational component (required soil tests) of the forage program. For those producers who obtain soil test recommendations, there is support for the application of up to 230 pounds of actual nitrogen, split among three application windows (late winter, late spring, midsummer), to cool-season grass stands. The majority of Kentucky's forage base is fescue, a cool-season grass infected with a production-limiting fungal endophyte. Renovation of grass pastures and hayfields with legumes provides nitrogen through fixation, reducing the need for nitrogen fertilizer. One quarter of participants indicated they were renovating pastures, encompassing 11,739 acres. It can be assumed they would otherwise have applied 100 pounds of nitrogen per acre at \$0.75/pound, in two split custom applications (\$4.50/acre/application), and the benefit lasts three years (average life of a clover stand). Fertilizer and fuel savings from renovation should be almost \$3 million according to this scenario.

The improvement in forage quality as a result of renovation may increase net farm income as well. Participants indicated roughly equivalent acreages of hay and pasture improvement plans. For the following analysis, it was assumed that approximately 5,000 acres of each were renovated.

Pasture—Higher quality grazing provided by improved (renovated with red clover) pastures improves profitability through higher weaning weights and increased conception rates. Returns calculated by UK specialists (Burdine, Eldridge, Trimble) can be \$31/acre/year, or \$93/acre over three years, representing an increase of nearly half a million dollars in farm income for program participants in this time frame.

Hay—The improvement in yield and quality of hay produced from hayfields through renovation with red clover may increase income by \$270/acre over a three year period (Burdine, Smith, Trimble). This increased hay value represents \$1.35 million from 5,000 acres.

Another indication that reporting responses may be influenced by previous program participation is the high number of producers (94%) who claimed to “. . . usually seed an improved or certified variety . . .”. The forage program will cost-share only certified, plant variety protected, or proprietary forage varieties recommended in the Seed List. Although UK specialists are skeptical that such a high percentage of improved varieties are utilized without such a requirement, this response indicates a profitable practice change.

Over half (59%) of the respondents indicated hay improvement as an objective for forage program participation. If half of those respondents seeded improved varieties of alfalfa or red clover, they may see an average extra value of \$400/acre over the life of the stands (Jimmy Henning, personal communication). Based upon the reported hay acreage (22,863), this represents \$2.7 million in additional income or value.

Replacing endophyte-infected fescue with novel-endophyte (stand life 10 years) or endophyte-free (stand life five years) fescue increases the pounds of weaned calf per cow. Increases are primarily due to higher conception rates and weaning weights. The benefit per acre is \$44 (Kenny Burdine, personal communication); assuming 10% of the pasture acreage seeded (24,094) went to each replacement strategy, an increase in income of \$1.5 million may be realized.

Evidence of impact on some first-time forage program participants is found in the fact that one-fifth of respondents indicated this was the first time the land has been limed. Average soil pH was reported to be 5.9, too low (acidic) to support vigorous forage growth (especially legumes). UK recommends a target pH of 6.4 (6.8 for alfalfa) for optimal yield and stand persistence. For example, proper liming can enhance clover yield 25% and add a year to stand longevity (Ray Smith, personal communication).

The requirement to soil test and apply needed lime and nutrients to nearly 50,000 acres of Kentucky's forage base should significantly boost income and forage quality for the 1,431 producers reporting on this stage of the program.

Increased participation (fivefold from 2000 – 2006) in CPH-45 sales has been identified in Part I of this report as representing an estimated additional \$1.35 million of income annually for Kentucky beef producers. Certainly, an improved forage base contributes capacity to retain calves and capture these value-added premiums.

Data from participants in the filter fabric, fence and water, tiling, and custom seeding components of the forage program was limited. No evaluation of those activities was attempted.

Conclusions—The forage program has resulted in additional net farm income for participants, as reflected by numerous examples. Science-based decisions (soil testing, renovation, improved seed varieties) in forage management have increased through program participation. A high number of forage producers have realized economic benefits and adopted best management practices in their forage operations. Report form revisions will aid future analysis of program impact.

Recommendations—*Forage/Pasture/Grain Improvement*—To better evaluate economic impact, the seed type should be broken into five categories: cool-season grass, cool-season grass and alfalfa,

cool-season grass and clover, warm-season perennial, and small grain/row crops. The livestock type with average herd size, varieties sown, and the type of livestock fed should be dropped from the application. "Do you usually seed an improved or certified variety like this one" should be changed to "Did you seed with an improved or certified variety like this one before this program?" The option of "grazing" should be added to the question of how this forage is primarily used, and "renovate grass pasture" should be changed to "renovate grass stands with legumes." There should be four categories in determining the number of square bales and roll bales sold annually: mixed, alfalfa/alfalfa mixed, clover/clover mixed, and grass. The total number of acres before seeding should be dropped. The buffer pH should be dropped as it only confuses the applicant. The option of "cash hay" in the primary use of land should be changed to "hay". The type of row crop, seed type if cash hay or pasture, land that is being limed for the first time, and annual sales of crop or hay should be removed. Since they are required to obtain a soil test before liming, it would be good to know the number of people who didn't previously soil test. The question "Did you previously soil test before participating in this program?" should be added.

Filter Fabric Pads—The average herd size should be removed from 5e as it is asked in the question with the type of livestock that will be impacted (2b). The type of new heavy use area should have only options of feeding area, gate or high traffic area, and forage storage. The option of "other" needs to be omitted as it only causes reporting errors and a large number of different responses that are difficult to evaluate. The question of how many bales a storage area holds should be "If for forage storage, how many bales storage area holds?" Options should distinguish small round, large round, and small square bales. Use a size of 4x5 or less than 1,100 lbs. for a small round bale and a size of 5x5 or greater than 1,200 lbs. for a large round bale. The type of hay storage structure and size of structure should be removed.

Fence and Water (Rotational Grazing)—Rotational grazing plans are being somewhat overlooked in the application process and can be removed. The number of pasture acres is not specific enough, creates confusion in the reporting process, and yields a number of different answers that are difficult to evaluate. The forage species to be grazed rotationally and numbering of watering points available before practice should be dropped. "Type(s) of livestock that will be impacted and average herd size" should be changed to "Type(s) of livestock that will be impacted and stocking rate before and after practice." Eliminate the two following questions pertaining to stocking rate. Other savings anticipated is more than likely an educated guess by the applicant, is reported in different units, and should be removed.

Subsurface Drainage—The only valuable data in the economic/impact information section is the primary use of tiled land and expected gain in yield as a result of proper drainage. All other questions can be removed from the report.

Participation in components of the program other than forage/pasture/grain improvement has been limited (fewer than 10% of program participants in any of the other cost-share areas). Increased publicity/educational sessions addressing production losses due to mud, poor soil drainage limitations to crop production, benefits of rotational grazing, etc. may increase utilization of these program features.

Fewer than five percent of respondents indicated pursuit of cash hay sales. Promotion of existing market assistance for cash hay sales (hay auctions, Kentucky Department of Agriculture hay website and hotline, etc.) may increase producer participation in the cash hay market.

Cattle Genetics Improvement Program

(Established February 2001, Updated November 2007)

Eligible Cost-share Items—Bull purchase or lease and semen purchase; artificial insemination (AI); heifer purchases.

Program Goals—The Cattle Genetics Improvement Program (genetics program) aims to increase cattle producers net income through improvement of herd genetic potential. This improvement is based upon the use of Expected Progeny Differences (EPDs) in selection of breeding animals. EPDs are indicators of the genetic worth of an individual animal as a parent when compared to another animal of the same breed according to the UK Extension publication “Using EPDs – Expected Progeny Differences” (ASC-141).

The ADB expected eligible cost-share items to be used to accomplish several objectives:

- Increase net farm income through genetically superior animals
- Improve producers ability to use science-based approaches to selection of breeding stock
- Facilitate use of artificial insemination to reduce costs associated with bull maintenance and realize productivity gains
- Ensure retention of quality breeding stock long enough to realize benefits to herd genetics

Analysis of Impact—The genetics program was the first model program approved by the ADB. During the review period, 16,602 farmers participated, and a majority likely raised tobacco at some point (Burris, Laurent, Bertram, Absher). Local agencies (often local Cattlemens Associations) developed leadership skills through administration of the program, including reporting accomplishments.

Educational opportunities and resultant profitable practice changes are a major benefit of the genetics program. Baseline data obtained before the advent of ADB model investments (Burris, Laurent, Bertram, Absher) indicate that among typical Kentucky cow-calf producers, reproductive soundness ranked fifth and genetic predictors (EPDs) ranked eighth as most important factors when selecting herd bulls.

Reports from the genetics program (which are likely affected by previous program participation or awareness of program requirements) reflect that 67% of participants previously used EPDs. In addition, Breeding Soundness Evaluations (BSEs) are required for all bulls purchased or leased through the program. Prior BSEs were reported by 65% of participants, again likely inflated over baseline data due to program participation/awareness. Since 89% of participants purchased bulls, a significant economic impact should result from educating producers to tailor sire selection to their operations and marketing plans and to ensure reproductive efficiency of herd bulls before the breeding season commences. The average herd size reported included 60 cows and two bulls; bulls covered an average of 29 cows – a reasonable expectation for sound, established sires.

Responses on genetics program report forms indicated 55% of producers intended to breed heifers to purchased bulls, and 75% planned to retain heifers from purchased bulls. The inclusion of

a “Heifer Acceptable Bulls” category, based primarily on calving ease/birth weight EPDs should, among other advantages, reduce losses due to calving difficulties (dystocia). Dystocia leads to estimated losses of \$750 million annually to the cattle industry (UK Extension publication “Pelvic Measurements and Calving Difficulty”, ASC-142).

CPH-45 market participation among program respondents was 11%, more than double the statewide average (5%). Producers receive an average \$40.95 per head premium annually through participation in these value-added feeder calf sales, according to the Kentucky Beef Network.

While AI provides numerous benefits (increased production, enhanced conception rates after parturition, breeding program flexibility), reports show the percentage of producers accessing the AI component to be only slightly above the state average (Darrh Bullock, personal communication). Most participants who cost-shared AI expenses were either purebred or commercial producers with previous AI experience.

The genetics program increased demand for quality bulls and consequently inflated prices. Part of the reason for the high percentage of participants bull purchases may be linked to the resale value of the bull. While participants must retain ownership of breeding animals through at least two breeding seasons, most will replace bulls quickly afterward due to breeding programs, lack of facilities to manage multiple bulls, The program limits producers to a lifetime maximum participation of \$10,000 (\$5,000 each for bull/semen and heifer purchases).

Conclusions—Nearly 15,000 bulls were purchased as a result of the genetics program. These animals were selected using the science-based approach of EPD data to match producers management and marketing systems. Increases in net income through genetic improvement of herds can be attributed to: improved breeding programs, increased calving percentage, decreased losses due to dystocia and other health problems, value-added market participation. Report form revisions will aid future analysis of program impact.

Recommendations—Genetics (Beef Production)—*The date of purchase and age of animal at purchase serves no purpose on the report. The type of bull chosen in the initial application is irrelevant to what was actually purchased and the question should be removed. The information on EPDs is already on the registration/certification papers and contains no data valuable to the report. The option on the type of operation should be changed from “purebred” to “registered”. The answers relative to using EPD information in sire selection is probably skewed due to previous involvement in the program and can be removed. “Estimated number of cows that will be covered by cost-share bull” should read “Estimated number of cows that will be covered annually by cost-share bull.” Questions pertaining to bull being bred to heifers; retention of heifers from bull; marketing of calves sired from bull; and previous breeding soundness evaluation are not useful to evaluate impact and should be eliminated. The question pertaining to calving season should be omitted as it provides no useful information. The question of how the participant previously purchased the bulls should be asked “Before this program where did you purchase your bulls?” Options include stockyard; purebred producers; and special sale. The average cost per straw and previous AI breeding can be removed.*

Genetics (Dairy Production)—*The number of bulls in the herd and estimated number of cows that will be covered by the cost-share bull are the only useful questions in the dairy production section. The data from the average cost per straw, AI breeding in the past, retention of heifers, and marketing of calves are irrelevant to the report and should be removed.*

Heifer Improvement—Age of animal at purchase, EPD type purchased, and the type of bull chosen in the initial application do not provide usable data and should be removed. The number of bulls in herd, marketing strategy of calves from these heifers, and calving season in beef and dairy production should be dropped. The option on the type of operation should be changed from “purebred” to “registered” for both dairy and beef production.

Sustainability of herd genetic improvement may be challenged by lifetime maximum participation levels. Inflated costs of quality bulls may result in producer regression to purchases of inferior breeding stock. The advantages of improved replacement heifers to breeding programs may not be realized until three to four years into their reproductive careers, and producers are limited to two heifers per season.

The ADB should consider increasing caps to ensure maximum statewide gains due to genetic improvement. It is unclear why producers are limited to two heifers per season. Consideration should be made for allowing producers to purchase more than two up to the dollar limit.

The advantages of AI are not being fully exploited by program participants. An educational component emphasizing AI benefits, AI training support, and custom AI services may increase participation.

Cattle Handling Facilities Program

(Established June 2001, Updated November 2007)

Eligible Cost-share Items—Handling facilities and equipment for beef cattle; secure lot or pen for mature beef bulls; pens for weaning calves; handling facilities and equipment for dairy cattle; temporary or permanent shade.

Program Goals Improve net farm income through improved cattle corrals and handling facilities for beef and dairy cattle to allow for best management and health practices that augment efficient production and marketing opportunities; encourage science-based decisions on cattle management, handling and health programs on the farm; impact a high number of beef and dairy producers; minimize animal and human injury and stress during treatment and handling operations; change producer attitudes about cattle management and handling.

The ADB expected eligible cost-share items to accomplish several objectives:

- Enable beef cattle producers to conduct necessary health care and management practices
- Encourage control of herd bull(s), improve bull health/fertility, and facilitate a controlled and defined breeding season
- Improve management at weaning to decrease stress on calves
- Increase profitability of dairy operations by facilitating health care and management practices
- Establish temporary or permanent shade solutions to reduce heat stress on animals

Analysis of Impact—The Cattle Handling Facilities Program (facilities program) also builds competitiveness within Kentucky's livestock industry. Improved cattle handling facilities should improve

net farm income, especially by decreasing labor costs. The most important benefit, however, is the reduction of injuries to workers and animals according to the UK Extension publication “Cattle Handling Facilities: Planning, Construction, and Layouts” (AEN-82).

Agriculture is one of the most dangerous occupations in the US. Most injury prevention efforts focus on tractors and other machinery, but according to national statistics livestock account for 19% of farm injuries (tractors are involved in 6%, other machinery in 15%; Isaacs, Powers, Lineberry, Scharf).

One thousand two hundred and five Kentucky Cattlemens Association members responded to a 2001 survey on cattle-related injuries. They reported a total of 170 injuries in the previous year—a rate of 14.1 injured persons per farm per year. Half of the injuries described were due to workers being kicked or run over by cattle, and a third required medical attention or led to more than four hours of missed work (Browning, Westneat, Davis).

One northern Kentucky producer reported sustaining a broken leg while working cattle; the resulting medical bills exceeded \$5,000 (Sam McNeill, personal communication). Construction or improvement of cattle handling facilities may save Kentucky producers significant money through reduction of both medical expenses and lost worker time due to injuries.

Proper working facilities benefit herd health through reduction of stress and injury. Animal stress can lead to weight loss, increased susceptibility to disease, and other related performance problems. Bruising and injuries resulting from improper handling are quality defects. Stress-related problems can reduce farm income and generate an inferior end product. Members of the Kentucky Veterinary Medical Associations Executive Board who practice large animal medicine state that the new equipment has been very beneficial for them in treating the cattle on the farm, and think the program is beneficial in providing more safety while handling livestock (Louise Cook, personal communication).

The facilities program has reached a large number of Kentucky producers (15,073). As with the forage program, most raise beef cattle (of 2,087 reporting, 92% had beef cows, heifers, or stockers). Since a majority of beef producers also raised tobacco at some point, a significant number of tobacco-dependent operations are participating.

Educational sessions and demonstrations provide training opportunities for cattle producers participating in this program. Local agency personnel administering the funds increase leadership capacity within their communities. The health, safety, and welfare of human and animal populations is improved as modern, efficient cattle handling facilities come online throughout the state.

Economic impacts of the facilities program should be realized through returns to the participating operations, especially through labor savings. AEN-82 compares returns over variable costs per head for cow-calf operations with and without a \$5,000 investment in handling facilities. Facilities increased returns more than \$20/head, primarily through increases in calving percentage and weaning weights and decreases in death losses for calves and breeding stock. Participants reported an average herd size (beef cows, 51% of respondents) of 50 head on over 1,000 farms. Based on increased returns of \$20/head, they could realize an additional \$1 million in income.

Proper handling facilities enable producers to efficiently perform health care and management chores that are proven moneymakers. Analysis of some individual economic impacts due to specific tasks will come later.

Perhaps the most significant economic effect of this program is facilitation of producer participation in value-added markets. CPH-45 sales in Kentucky historically yield premiums to farmers who meet health care and management requirements while preconditioning feeder calves for solid feedlot performance. When asked about CPH-45 sale participation, 68% indicated previous participation and 86% planned participation after installing facilities. The actual number indicating plans to participate more than doubled the number previously participating. The baseline for responses may be inflated due to previous facilities program participation. An earlier survey of cow-calf producers conducted prior to ADB Model Investments (“baseline survey”; Burris, Laurent, Bertram, Absher) indicated only 10% participated in graded calf sales. This may indicate a milestone in educational success regarding value-added marketing. If it is assumed that 90% of the 1,057 cow-calf producers responding marketed an average of 35 calves in CPH-45 sales as reported, then based upon the \$40.95/head premium estimated by the Kentucky Beef Network this would amount to \$1.36 million in farm income attributable to value-added marketing.

Facilities program producer reports tabulated data on health care and management practices. The chart contains information from the baseline survey, as well as facility program participants previous and planned practices.

Table 41: *Percentage of respondents involved in cow health care and management practices.*

Practice	Baseline survey (%)	Before program (%)	After program (%)
Vaccinate cows	75	73	91
Vaccinate calves	94	83	96
Pregnancy check	25	44	60
ID calves	61	69	93
Separate bulls/cows	60	66	79
Castrate male calves	77	79	92
Implant growth stim.	–	34	50
Retain weaned calves	–	67	81

A significant improvement in intentions to identify calves is an important contribution to the \$720,000 of additional annual income generated through Process Verified Program (PVP) sales (mentioned in the Non-Model Investments discussion, requires animal ID). Animal identification provides numerous additional benefits beyond market access (recordkeeping, disease control, emergency management, etc).

In four of six responses to questions common to the baseline survey and program reports, there was an increase in profitable practices, implying progress – possibly due to previous program participation. More striking is the improvement shown in planned vs. current practices from producer reports. All show double-digit gains, ranging from 13–24%. According to UK Extension Ruminant Veterinarian Patty Scharko, these practices are profitable for farmers. Pregnancy checking and culling open cows can have an annual net value of \$235. Implanting growth stimulant can

add \$24/head and internal parasite control (also easier with handling facilities) adds \$17/head net value.

It should be noted that all annual economic benefits from the facilities program should recur for at least 10 years (potentially many more) due to the useful life expectancy of the equipment and structures acquired through cost-share.

Over one-fifth of respondents indicated their herds calved year-round. The secure lot/pen for mature beef bulls component of the facilities program provides a tool for defining and controlling the calving season. Nearly 80% indicated plans to separate bulls from cows after program participation, up from 60% in the baseline survey. Labor savings represent a significant economic impact of the program; a defined calving season will allow producers to work calves together, amplifying efficiency and labor cost savings. Uniform lots of calves also capture market premiums.

Data on weaning pens, dairy facilities, and shade structures was limited and no analysis was attempted of those program components.

Conclusions—The facilities program increased net incomes for a high number of cattle producers (primarily beef producers) through labor savings, reduction of medical expenses and lost work time, improved herd health and productivity, and access to value-added markets. The ability to adopt/enhance science-based management and health care practices are facilitated by the cost-share equipment and structures. Report form revisions should streamline program administration and aid analysis of impacts.

Recommendations—*Project Information - Cow herd size information is good to know, but doesnt provide any real value for the report. The question pertaining to the identity of calves should be “Did you previously identify calves with tags, brands or tattoos?” The average weaning weight number is an educated guess since most farmers dont have access to scales at weaning, and this question needs to be removed. Remove question about selling calves at weaning. An option of “bulls” needs to be added to the question about the usual average selling weight of steers and heifers. The question, “How many calves do you normally sell?” inserted after the average selling weight question would be helpful. The question relating to participation in a CPH sale with the new equipment has already been asked. The question pertaining to calving season should be omitted as it provides no useful information.*

Several farm safety experts indicated the ADB should consider implementing cattle-related injury prevention/general safety training sessions in conjunction with the facilities program. The importance of the benefits that the equipment provided through program participation (if properly utilized) can bestow upon human and animal health, safety, and welfare should be emphasized.

The benefit afforded by investment in long-lasting equipment perpetuates annual economic gains. The ADB should consider the sustainability contributed by similar durable investments in future model program decisions.

Hay, Straw, and Commodity Storage Program

(Established November 2002, Updated November 2007)

Eligible Cost-share Items—Hay and Straw Storage; hay handling equipment; commodity Storage.

Program Goals—Impact a high number of producers affected by loss of income resulting from cuts in tobacco quota; encourage farmers to improve practices related to hay, straw, and commodity utilization and storage; increase the quality of stored feed and efficiency of storage, which will increase hay value and animal gain/production; enable grain producers to implement marketing strategies to capture higher prices than available on the cash market at harvest; provide livestock producers the ability to utilize grain grown on the farm; allow livestock producers to invest in commodity or blended feed storage facilities.

The ADB expected eligible cost-share items to be used to accomplish several objectives:

- Maintain nutritional value of hay
- Provide opportunities to develop commercial hay sales
- Present opportunities for small grain producers to market straw
- Allow livestock producers to purchase commodities or blended rations in bulk at reduced prices
- Improve livestock weight gains through implementation or enhancement of feeding programs, resulting in higher net returns

Analysis of Impact—The Hay, Straw, and Commodity Storage Program (storage program) provided funding to nearly 7,000 participants during the review period. As with other major model programs, most participants (92%) produce beef cattle, implying assistance to a large number of tobacco growers.

Investments per participant (\$2,800) were the highest among major model programs – more than double the closest, the Cattle Handling Facilities program (\$1,300/award) Table 39. These two major model programs invest in equipment and structures that may remain in use for 10 – 20 years or more, providing benefits on a recurring basis to producers.

Educational sessions are required by the program, and encourage efficient investments in recommended structures and equipment. It is encouraging to note that some counties have offered safety training in conjunction with the hay handling equipment and grain storage components. As with the Cattle Handling Facilities program, it should be emphasized that the human safety impacts of proper utilization of these cost-share programs are significant. Local agency personnel build leadership capacity through administration of program funds, provision of educational support, ensuring producer compliance with program requirements, and reporting accomplishments.

For the time frame represented by report forms, the primary participation involved construction of hay storage structures. Approximately 1,000 structures with an average of 2,400 square feet of storage space and 15 feet of vertical clearance were constructed. According to UK specialists, this average space will accommodate 171 tons of square bales or 131 tons of round bales of hay.

The economic impact of storing hay inside a structure with a roof can be estimated by comparing losses with outside storage. UK research demonstrates that hay stored outside on the ground loses 30% dry matter per year, whereas hay stored under a roof only loses 5% dry matter (Kenny Burdine, personal communication). Therefore, a savings of 25% of hay value may be ascribed to inside hay storage.

Round bale storage was the objective for over 90% of respondents. Assuming 900 producers were able to protect 131 tons of grass or mixed hay each, at a value of \$30/ton, total savings would be \$884,250. If 100 farmers each sheltered 171 tons of square bales of alfalfa or other high value hay (\$60/ton), annual income could increase by \$256,500. The combined annual increase of \$1.14 million may be realized for 20 years or more, depending upon useful life of the structures. Additionally, these prices reflect the current market according to UK specialists and agents, after a spring season with abundant rainfall. Recurring periods of drought (2007, fall 2008) may quickly decrease hay supplies, increasing demand and prices.

Only 3% (37 producers) of respondents indicated straw storage plans. Quality cereal straw, marketed to select end-users (horse industry, landscapers, construction), can sell for \$80 to \$120 per ton (UK New Crop Opportunities Center publication “Cereal Straw Production”). If the 37 producers each realized 25% savings due to inside storage of 171 square bales of straw worth \$100/ton to these specialty markets, nearly \$160,000 of additional annual income could be realized for 20 years or longer.

While these calculations represent gross returns, the significance of the savings means producers can recoup initial investments within two to three years. This means the savings due to structures will represent net income for more than 15 years. Both the grain and commodity storage components of the storage program attracted about 50 participants. While the data was difficult to quantify, most reported benefits including: capture of better market prices for stored grain, labor savings, lower prices for commodities purchased in bulk quantities, other annual savings or increased income.

Data on participation in the hay handling equipment component of the storage program was limited, and no analysis was attempted. Information on net returns based upon improved livestock performance resulting from program participation was likewise limited; it is inferred that some of the economic gains attributed to hay value may be realized through improved on-farm feeding programs and increased livestock production.

Conclusions—The storage program has allowed nearly 7,000 producers to improve farm income by: reducing hay/straw losses through inside storage, saving on feed costs by utilizing on-farm feed and purchasing bulk commodities, pursuing cash hay and straw markets, reducing labor costs associated with hay and grain handling. Report form revisions should streamline program administration and aid analysis of impacts.

Recommendations—*The question pertaining to the type of storage should be “Investment Area/Type of Storage and/or equipment, circle all that apply,” since there is the option of purchasing equipment. An option of hay and grain handling equipment should be provided for this question.*

Hay or Straw Project—One form should be returned before receiving 100% of the payment instead of 90%. Some farmers don't fill out the form for 10% of the payment, and a single form creates less confusion and paperwork. Therefore, the subheading should be “Return this form before receiving 100% payment” and the second question should be “100% of cost-share request for this cost-share investment.” The livestock type and average herd size should be removed. The type of structure, average annual yield, and annual bales harvested is good information to know, but does not contain any data useful to evaluation. Insert the options of large round and small round in the number of bales stored outside prior to structure. Use a size of 4x5 or less than 1100 lbs. for a

small round bale and a size of 5x5 or greater than 1200 lbs. for a large round bale. The options in the type of hay to be stored should be changed to grass, alfalfa, alfalfa/grass, clover, clover/grass, straw, and other, and also include the amount of hay to be stored. An option of small round needs to be added to the bale package to be stored in the new facility. The number of bales sold annually, selling price, expected feed savings, expected increase in hay or straw sales, and other expected yearly savings or added income should be removed. The form required before receiving 10% of the payment should be eliminated since most of the information can be determined from a single form.

Grain Project—A single form for 100% payment should be required as for the Hay or Straw Project, and the 10% payment form should be eliminated. The type of previous grain structure, size of previous grain structure, and existing grain storage capacity before cost-share should be removed, as the information needed concerns the new structure and the increase in storage capacity. The acres of grain harvested and average yields of grain should be removed.

Other Commodity Storage—A single form for 100% payment should be required as for the Hay or Straw Project, and the 10% payment form should be eliminated. The type of old commodity storage, dimensions of old commodity storage, yearly tonnage purchased before new structure, and estimated tons fed annually should be removed. Three questions need to be included on this report: How many tons of storage? How many tons will be stored annually? How much will be saved annually per ton?

Hay Handling Project—The title needs to read, “Hay and Grain Handling Project.” A single form for 100% payment should be required as for the Hay or Straw Project, and the 10% payment form should be eliminated. This form should have the following questions.

- *What was the total project cost for this cost-share investment?*
- *Was 100% of cost-share requested for this cost-share investment?*
- *What equipment did you purchase?*
- *What savings realized through improvement (circle all that apply)?*
 - *Labor*
 - *Time*
 - *Efficiency*

Anecdotal evidence of safety training in two counties as part of this program reflects local leadership initiative through recognition of the significance of human safety. Safety education and the communication of safety benefits of the program should be emphasized as contributing and complementary to economic advances.

The long useful life of facilities established through this program amplifies the return on investment over many years. The ADB should consider the sustainability contributed by similar durable investments in future model program decisions.

Diversification Programs

Five programs were designated as diversification programs. They are Agricultural Diversification, Commercial Poultry, Dairy Diversification, Goat and Sheep Diversification, and Swine

Diversification. Diversification programs utilized \$16,561,283 (17%) of the total investments in county model programs with 10,069 (14%) participants averaging \$1,645 per cost-share program. Three of the programs, Commercial Poultry, Dairy, and Swine are stand alone programs and not included under Agricultural Diversification Programs. The Direct-to-consumer Livestock and the Poultry: Pastured and Other Fowl Programs attracted new producers to those types of businesses. Other programs may not have encouraged new producers to diversify into a different production area but promoted diversification in other ways, such as different modes of marketing, modified production methods, or diversification within the same business (i.e. different fruits or vegetable).

Agricultural Diversification Programs

(Established September 2001)

The Agricultural Diversification Program is fifth among county model programs in terms of investments at \$11,840,156 or 12% of total county model program investments. There are 5,312 or 7% of participants, which ranks these programs just behind the four major model programs. Producers invested approximately \$18,500,000 for a total combined investment of over \$30,000,000.

Eligible investment areas—Agri-tourism; Commercial Aquaculture Production; Certified/Commercial Kitchen Construction or Renovation; Direct-To-Consumer Livestock Production; Equine Production; Commercial Fruit And Sweet Sorghum Production; Greenhouse Construction Or Conversion For Horticultural Enterprises; Small Animal Production (Bees and Rabbits); Production of Commercial Ornamental Horticultural Products; Poultry Production: Pastured and Other Fowl; Commercial Vegetable, Mushroom, and Herb Production; Sod Production.

Most investment areas include the following cost-share items which are termed standard cost-share items (see note below) for this report and are not listed with each investment area or program description:

- Equipment (not self-propelled) essential to provide on-farm value-added processing.
- Computer hardware and software to assist in performance record keeping and financial management.
- One half the cost of participation in the Kentucky Farm Business Management Program.
- One half the cost of membership in a producer-owned marketing cooperative
- Promotional and advertising materials in an amount not to exceed \$1,000, excludes products or services provided by the Kentucky Department of Agriculture or other state programs.
- On-farm direct-to-consumer sales cost-share items These standard cost-share items are common to many of the following individual program discussions and will not be repeated.:
 - Construction of new permanent structures or conversion of existing structures to be used for retail sale of product. Meeting rooms, exposition centers, educational facilities and construction or improvements to buildings serving primarily as residences are not eligible cost-share items.

- Site preparation including on-site utility extensions and officially permitted on-site waste treatment facilities.
- Refrigerated or non-refrigerated equipment (not self-propelled) for storing product.
- Display equipment, including refrigerated equipment, to assist in selling of product.

Program Goals—Improve net farm income through the development and expansion of new agricultural products and through the development of new ways of dealing with existing agricultural commodities. Encourage research and science-based decisions for the creation, management and expansion of these programs. Impact a high number of producers affected by loss of income resulting from cuts in tobacco quota. Assist producers already exploring alternative agricultural enterprises who may lack capital to further expand their programs.

Agri-tourism

Agri-tourism is an emerging opportunity for producers who are looking for inventive ways to diversify their farming operation.

Eligible Cost-share Items—Site preparation for items that ensure consumer safety: parking areas, grading, traffic flow, sidewalks, established walkways and onetime cost-share on one-half of the cost of liability insurance for new agri-tourism ventures, and standard cost-share items.

Investment Area Goals—To assist producers in the development or renovation of agri-tourism projects that promote economic activity that occurs on a farm for the enjoyment or education of the public to promote agricultural products, services, or experiences, which generates additional farm income.

Table 42: Agricultural diversification investments.

Agricultural Diversification Program	Average Cost-share Investment	Average Producer Investment	Average Total Investment	Average /Previous Years Sales	Average Annual Projected Sales	Average Annual Gain ^a	Years Required to Recover Investment
Agri-tourism	\$2,722	\$4,823	\$7,545	\$14,376	\$17,143	\$2,767	2.73
Aquaculture	\$2,569	\$4,017	\$6,586		Insufficient Data		
Certified/Commercial Kitchen	\$1,059	\$1,040	\$2,099	\$1,750	\$9,500	\$7,850	0.27
Direct to Consumer Livestock	\$2,393	\$3,353	\$5,746	\$24,826	\$27,246	\$2,420	2.37
Equine	\$2,624	\$4,692	\$7,316	\$43,638	\$49,906	\$6,268	1.17
Fruit Sorghum	\$2,124	\$3,915	\$6,039	\$28,144	\$35,982	\$7,838	0.77
Greenhouse Conversion/Construction	\$2,457	\$3,676	\$6,133	\$28,056	\$32,764	\$4,708	1.30
Honeybees	\$1,107	\$1,266	\$2,373	\$1,311	\$1,985	\$674	3.52
Rabbit	\$1,316	\$1,437	\$2,753		Insufficient Data		
Ornamental Horticulture	\$2,253	\$3,434	\$5,687	\$34,625	\$49,241	\$14,616	.39
Poultry-Pastured/Other Fowl	\$1,986	\$2,614	\$4,599	\$35,523 ^b	–	N/A	N/A
Vegetable Mushroom Herb	\$1,611	\$2,215	\$3,827	\$33,913	\$37,943	\$4,030	.95
Sod				No Data			

^a Average annual gain is from participants with prior sales only.

^b Some pastured poultry and other fowl participants were involved in commercial poultry prior to investing in pastured poultry.

Analysis of Impact—Eight of 37 total producers reported participation in the agri-tourism investment area. Average cost-share funds invested were \$2,722 per project with an additional average expenditure by producers of \$4,823 per project or 77% more than the cost-share amount (Table 42). Agri-tourism accounted for just over 1% of all agricultural diversification investments. Based solely on average projected annual increase in sales of \$2,767, it would take 2.7 years to cover the total (producer + ADB) average investment. Ninety percent of those reporting indicated that

they would have invested in the project anyway. Average farm size of those participating was approximately 100 acres, but ranged in size from 12 acres to 213 acres. The majority (73%) had a commercial agri-tourism operation prior to receiving the cost-share funds (Table 43). The types of operations were highly variable and will not be discussed here. Sixty percent were marketing other producers products prior to cost-share. While there was no indication whether the percentage might increase, participants expect to provide an outlet for an average of approximately nine other producers per agri-tourism project. While the actual degree of benefit cannot be determined, marketing products from neighboring farms improves market access and increases gross benefit to the community. Participants expect a 19% increase in sales after investment from \$14,376 to \$17,143 the first year. They reported an average of 2,163 visitors the year before cost-share investment, but expected a 20% increase in visitors after investment. Twenty-seven percent report that they do not carry liability insurance. This relatively high percentage without liability insurance is of great

Table 43: *Evaluation of diversification programs.*

Diversification Model Programs	New to this type of operation	Percentage of Ag Diversification Funds ^a
Agricultural Diversification Program		
Agri-tourism	27%	1.13%
Aquaculture	Insufficient data	1.01%
Certified/Commercial Kitchen	Insufficient data	0.17%
Direct to Consumer Livestock	59%	16.07%
Equine	9.5%	26.41%
Fruit and Sorghum	41%	10.96%
Greenhouse	47%	10.33%
Conversion/Construction		
Honeybees	24%	3.93%
Rabbit	Insufficient data	0.65%
Ornamental Horticulture	30%	8.97%
Poultry - Pastured / Other Fowl	75%	2.90%
Vegetable, Mushroom, Herb	10%	17.40%
Sod	Insufficient data	0.00%
Commercial Poultry Diversification	0%	
Dairy Diversification	0.7%	
Goat Diversification	31%	
Sheep Diversification	20%	
Swine Diversification	0%	

^a Out of 75.1% that could be characterized.

concern risking potential loss of the farm should an accident occur resulting in a large settlement.

Conclusions—The goal of this investment area “to assist with development or renovation of an agri-tourism project to provide economic benefit while generating additional income” was achieved for those few who have utilized this program. Efforts to increase interest in this investment area are advised. University of Kentucky College of Agriculture reporting system indicated that the interest in this area is much higher than participation through the ADB would suggest. Forty counties reported significant activities aimed at developing agri-tourism.

Recommendations—Responses to the type of previous agri-tourism operation were variable, not useful for impact assessment, and could be eliminated. If counties are limiting access to this area, a statewide program would improve access. Increased emphasis on liability insurance is recommended. A one-time payment of 100% of the first years insurance premium should be considered to encourage producers to initiate an insurance policy.

Commercial Aquaculture Production

Eligible Cost-share Items—Construction of aquaculture production pond and impoundment reservoirs including earth moving costs, providing water source, and electrical power; equipment and materials necessary for pond aeration; refrigerated and non-refrigerated equipment for transporting product; and standard cost-share items.

Investment Area Goals—To assist cultivating the aquaculture industry within the Commonwealth; to provide assistance to new and established Kentucky producers seeking to make new investments or expand aquaculture production.

Analysis of Impact—The three reports from aquaculture projects were below the number needed for accurate assessment of impact for this program. However, actual participation was closer to 27 producers with 35 projects out of the 50-60 active commercial aquaculture sites in Kentucky. Other data indicated that the average cost-share investment was \$2,569 per project with producers adding an additional \$4,017 per project or 56% more than the cost-share amount. Aquaculture accounted for 1% of the agricultural diversification funds invested by the ADB.

Conclusions—It is unclear whether the aquaculture investment area was successful in cultivating the aquaculture industry. The industry has limited producers. Whether all had equal access to ADF is not known. The aquaculture investment areas may have encouraged a few producers to try aquaculture, but it is not known whether those producers are still in the business. There are some indications that existing operations benefited, but this cannot be confirmed.

Recommendations—The question regarding product produced is asked twice in current reporting forms. Avenues to better assist existing commercial operation should be explored and may be more productive. Small cost-share investments may not be sufficient to encourage producer to pursue new aquaculture ventures.

Certified/Commercial Kitchen Construction or Renovation

Eligible Cost-share Items—Construction materials to install the appropriate grade of washable ceiling tiles, flooring, and wall covering; materials for the installation of water lines, gas lines, and drainage lines from existing lines, not including labor; materials to install any necessary hand or mop sinks; materials to install appropriate lighting; equipment necessary to add value to fruit and vegetable crops or to produce baked items in compliance with HB 391; production supplies including jars, boxes, bottles, labeling and packaging materials; computer hardware and software; home processing, micro-processing, or commercial processing training; and other standard cost-share items.

Investment Area Goals—To assist producers in the construction of a certified kitchen on their farm or in the conversion of an existing space to accommodate a kitchen permitted by the Department of Health for the on-farm production of value-added food items, as covered by House Bill 391.

Analysis of Impact—Seven of the 14 producers who participated in construction or renovation of certified/commercial kitchens filed reports. This program is almost a true 50/50 cost-share program with cost-share funds averaging \$1,059 with producers contributing an average of \$1,040. Construction or renovation of certified/commercial kitchens utilized only 0.17% of the agricultural diversification funds. A majority did not have this type of operation prior to cost-share investment, but indicate they will purchase products from other producers for processing, but do not have an operation where other producers can also process their products. The average farm size for those participating in this program was 120 acres and ranged from 28 to 274 acres. Sales were expected to increase from an average of \$1,750 the previous year to \$9,500 after investment. Individual investments were low, but average annual returns were expected to be almost four times the average total investment. Those reporting were expecting to cover the cost of the total investment with increased returns within approximately the first quarter of the year. Some will change their marketing strategy, but most will continue to produce for farmers market sales. By buying products from neighboring farms to process and resell, participants in this program are providing an additional market for local producers while adding value to those products for resale.

Conclusion—While this program has significant potential, very few counties offered it.

Recommendations—*Responses to operation type, Kentucky value-added products, number of producers, products purchase, previous years production levels, projected production levels, fees charged for use by others did not provide usable data and these questions could be dropped to improve reporting efficiency.*

If counties are limiting access to this program, a state-based program should be considered so that any producer with the need could get construction or renovation cost assistance for development of a commercial kitchen. These entrepreneurs have the potential to provide considerable benefit to other producers in their communities.

Direct-to-Consumer Livestock Production

Eligible Cost-share Items—Animal transport equipment; boxes, containers, labels and packaging for transport and sales; refrigerated equipment for transporting finished product; and standard cost-share items.

Investment Area Goals—To assist producers of livestock who desire to direct-market their livestock to consumers by use of small USDA-approved slaughter facilities within the state; to increase net farm income by providing an alternative marketing outlet for commercial livestock.

Analysis of Impact—Direct-to-consumer livestock continues to gain popularity as consumers look for more locally-grown products. Only 52 reports were available for analysis for direct-to-consumer livestock projects of 597 known participants. The average cost-share was \$2,393 per project with an average of \$3,353 or 40% more than the cost-share in additional investments from producers. Cost-share funds utilized by the direct-to-consumer livestock projects accounted for the third largest amount of agricultural diversification funds at approximately 16% of the total. Sixty-eight percent

indicated that they would have made investments without cost-share funding. Farm size averaged 200 acres, but ranged in size from 15 to 800 acres. Fifty-nine percent indicated that they did not market direct to consumers prior to participating in the program. Those that were currently marketing direct to consumers gave various descriptions of the previous type of operation, but many indicated beef as a part of their answers. Their sales prior to cost-share averaged \$24,826 annually and were project to increase by \$2,420 by the next year. An average projected annual increase in sales of \$2,420 would take 2.4 years to equal the total average investment. Fifty percent of those reporting were marketing products primarily on-farm with wholesale, cooperatives, farmers market, multiple and other marketing accounting for the rest of the responses. After cost-share, a higher percentage of producers plan to market on-farm. Several producers will continue to utilize stockyards as a secondary market outlet.

Conclusions—This program has promoted diversification by encouraging producers who had not utilized direct-to-consumer livestock sales to do so. The direct-to-consumer livestock investment area of the agricultural diversification program has been successful in promoting an alternative marketing system for the majority of participants in this program.

Recommendation—*It is highly recommended that efforts to enhance this program be continued in order to increase producer marketing options.*

Equine Production

Eligible Cost-share Items—Materials to renovate existing tobacco barns by conversions to horse stalls; fencing materials to enlarge paddock turn-out areas; water lines to existing and expansion paddock areas; equipment for transporting animals; and standard cost-share items.

Investment Area Goals—To enable farmers who previously have not been engaged in equine production or to allow producers already engaged in equine production to expand the scope of their operations; to increase net income in the equine industry statewide.

Analysis of Impact—Eight hundred ninety-five cost-share equine investment area participants received an average \$2,393 with producers investing on average an additional \$4,692 per project or 79% more than the total cost-share investment. Equine cost-share investments are more than 26% of the total agricultural diversification funds invested. One hundred fourteen reports were available for analysis. Forty percent indicated that they would not have made the investment without cost-share assistance. Farm size averaged 100 acres, but ranged from 10 to 500 acres. More than 90% were already involved in equine operations. Numerous types of operations were listed, but 26% indicated that breeding was a part of their operation, 19% indicated boarding, and 14% indicated training. Numerous breeds were listed, but American Quarter Horse was the predominant breed reported by 22% of those who responded. Thoroughbreds were listed by 15%, Tennessee Walking Horses were listed by 11%, and American Saddlebred were listed by 10%. Participants reported sales of \$43,638 prior to cost-share investment and projected sales of \$49,906, a 14% increase. Participants in the equine program expected to cover the average total investment in a little more than one year with increased profits. Average herd size was expected to increase from 12 to 17.

Conclusions—Very few respondents were new to the equine business, which raises the question whether the equine program should qualify as an agricultural diversification program. However,

if participants were developing a different type of equine business, it would qualify. This was not clear from the reports filed. Interest in the equine investment area will likely increase. The World Equestrian Games and equine incentive programs may generate more interest in this investment area in the future.

Recommendations—A drop down menu would improve analysis for breeds. Not only were listings of breeds highly variable, certain breeds were listed by several different names. For example the American Quarter Horse was listed as American Quarter Horse, AQH, QH, QT, quarter, and quarter horse. The same was true for the Tennessee Walking Horses. Such variable data does not allow the use of standard Microsoft Excel tabulation functions, and thereby increases the length and difficulty of analysis.

The equine investment area should be moved from the agricultural diversification program to its own category. It has more participants than dairy, swine, and poultry combined, which are separate programs.

Commercial Fruit and Sweet Sorghum Production

Eligible Cost-share Items—Seed and rootstock; transplanting equipment; fertilizer and soil amendments; plastic or plasticulture supplies and plastic laying equipment; water and irrigation supplies; trellis or other plant supporting materials; jars, boxes, labels and packaging for transport and sales; pesticide; commercial spraying equipment and related protective gear; bird netting for protection of fruit crops; specialized harvesting equipment; cooling equipment; sorting/grading equipment; cider presses and other juice extracting equipment; refrigerated and non-refrigerated equipment for transporting product; and standard cost-share items.

Investment Area Goals—To develop new revenues by assisting farmers in production of small and large fruits for sale through any commercially viable method; to enable farmers not previously engaged in fruit production to determine its economic feasibility for their particular operation; to allow producers already engaged in fruit production to expand their operation; and to assist in the development and expansion of sweet sorghum production and sale within the Commonwealth.

Analysis of Impact—Of the 459 participants in the fruit and sweet sorghum investment area, 88 reports were available for analysis. Cost-share investments averaged \$2,124 with the producer investing on average an additional \$3,915 or 84% more than cost-share funding. Fruit and sweet sorghum cost-share investments are almost 11% of the total agricultural diversification program investment. Ninety-one percent indicated that they would have made the investment without cost-share. Average farm size for participants in this program was 114 acres, but ranged from less than an acre to 610 acres. Forty-one percent were new to the commercial fruit or sweet sorghum business. Producers with prior commercial operations reported that 29% of those operations were commercial grape production, 16% were blueberry operations, 15% were apple orchards, 7% were sweet sorghum production, 4% were blackberry operations, 11% were producing multiple products, and 18% listed other products. Apple orchards averaged 3.1 acres in size, blueberries 3.6 acres, and vineyards 4.3 acres (one outlier was removed prior to averaging). Sufficient data were not available for other crops for averaging acres. Producers that were new to commercial fruit or sweet sorghum production reported that they intended to produce sweet sorghum (32%), grapes (18%), blackberries (14%), apples (9%) and blueberries (5%). Twenty-three percent reported that they

intend to grow multiple fruits in their new commercial fruit and sweet sorghum operation. Gross sales prior to cost-share averaged \$28,411 annually, but were expected to increase to \$35,982 after cost-share investment, a 28% increase in sales. Participants expected to increase sales enough to pay for total investments by the start of the fourth quarter of the first year. However, the prior average sales may be artificially low due to several reports of freeze damage that resulted in zero sales prior to cost-share. Producers reported few changes in marketing after cost-share improvement with a slight increase in sales at farmers markets, direct sales to wineries, and valued-added options. After cost-share investment producers expected to significantly reduce u-pick options and slightly decrease on-farm sales. Other benefits include improved quality and marketability of produce, reduced labor by increasing efficiency, improved marketing through sorting, and reduced fruit loss by controlling disease, insects, and wildlife damage.

Conclusions—The fruit and sweet sorghum projects contain diverse types of operations with prospects of further diversification by growing more or different types of fruit. There are significant numbers of new producers diversifying by growing fruits and sweet sorghum. Almost one-third of new producers intended to pursue sweet sorghum production. All fruit and sweet sorghum investment area goals were met and the program was one of the most successful diversification programs.

Recommendations—*Dropdown menus with common fruit production operation and a multi-option would improve reporting for fruit and sweet sorghum projects. Direct sales to wineries should be added before and after marketing options. Producers were asked to report acres of their 1st, 2nd, and 3rd crops prior to cost-share if applicable. However, there was no way to clearly identify the 2nd and 3rd crops. Therefore, averaging acres that could be vineyards, apple orchards, blueberry patches, or sorghum fields does not generate meaningful data. Acres, production levels and yield before and after are too variable for use and should no longer be included on reporting forms. This successful program should be retained and enhanced where possible.*

Greenhouse Construction or Conversion for Horticultural Enterprises

Eligible Cost-share Items—Cooling and heating systems; automatic irrigation systems; benches, tables, rails; hydroponic growing systems and components; refrigerated and non-refrigerated equipment for transporting product; greenhouse materials (plastic, glass, wood or metal); and standard cost-share areas.

Investment Area Goals—To assist producers in converting existing tobacco greenhouses to other horticultural uses; to assist in construction of new greenhouses for horticultural uses; and to develop a year-round horticultural industry within the Commonwealth.

Analysis of Impact—Of the 376 greenhouse construction or conversion investment area participants, 63 reports were analyzed. Cost-share investments averaged \$2,457 with producers investing on average an additional \$3,676 or 50% more than cost-share funding. Greenhouse construction or conversion cost-share investments are over 10% of the total agricultural diversification program investment. Seventy percent indicated that they would not have made the investment without cost-share support. Average farm size for participants in this program was 109 acres, but ranged from less than an acre (0.7) to 900 acres. Forty-seven percent indicated that they were new to greenhouse production. Greenhouse production prior to cost-share included bedding plants, vegetable plants, flowers, and tobacco plants, but answers were too variable and inconsistent in terminology to

generate useful results. Production type information after cost-share was unavailable for analysis. Sales increased from an average of \$28,056 prior to cost-share to \$32,764 after cost-share. Total average increase in gross sales after investment is expected to take only 1.3 years to cover total average investment costs. Other benefits may include efficiency, labor savings, and improvements in growing environments that produce healthier plants, which reduces production cost or reduces disease losses. Responses to projected production levels were too variable and contained inconsistent units of production, rendering analysis impossible. Marketing options did not change drastically after cost-share investment with on-farm sales the dominant method of marketing before and after. Fewer producers chose wholesale as an option after cost-share.

Conclusions—The greenhouse construction or conversion investment area accomplished two of three goals. It has assisted former tobacco producers to reconfigure their tobacco transplant greenhouses so that they could produce horticultural crops and assisted producers with the construction of new greenhouses. However, tobacco greenhouses are not suitable for all types of greenhouse operations. There is no indication that this investment has helped develop a year-round horticultural industry within the Commonwealth.

Recommendation—*High tunnel structures should be considered as an option under this investment area.*

Small Animal Production

Investment Area Goals—To assist farmers in diversifying into small animal production through acquisition of quality stock and commercial equipment; to encourage additional processes that will add value to the market price of the small animals.

Honeybees

Eligible Cost-share Items—New or used hives, other wooden ware, foundation, specialty supers; new or used extractor, honey processing, bottling and storage equipment; purchase of bees from an inspected source; protective suits, veils, gloves, smoker, hive tool; jars, bottles, labels, boxes, signage for promoting/selling honey; candle making supplies, including wax melter, molds, wicks; approved medications and non-motorized equipment essential for the transportation of beehives; and other standard cost-share items.

Analysis of Impact—Of 316 participants in the honeybee investment area, 67 reports were analyzed. Cost-share investments averaged \$1,107 for honeybee projects with producers investing on average an additional \$1,266 or 14% more than cost-share funding. Honeybee cost-share investments are almost 4% of the total agricultural diversification program investment. Eighty-eight percent indicated that they would have made the investment without cost-share support. Average farm size for participants in this program was 98 acres, but ranged from five to 474 acres. Seventy-six percent indicated that they were involved in honey production prior to investment. Sixty-four percent of those who indicated that they were already involved in beekeeping described their operation as a hobby with 39% reporting that their operation was commercial. The rest either did not respond or listed some other farming operation. There were no questions on the reporting form that asked if those describing their operation as a hobby would change the description to commercial after investments. Of those responding to questions regarding before and after estimates of gross sales,

average gross sales were expected to increase from \$1,311 to \$1,985, a 57% increase. Although 3.5 years are required to recover the total average investment through increases in sales, producers realized other benefits such as improvement in equipment and hives, commercial supplies, reduced labor, and improvements in extraction efficiency, etc. Although most were already involved in honey production, investments should help change some operations from a self-described hobby to a commercial operation. Production was expected to increase by more than 60% after investment from an average of 356 to 575 pounds. Production data was reported in various units, but was normalized to pounds by using a factor of 11.75 lb/gal. Cases were assumed to contain 24 12 oz. bottles. Fifty percent sold their honey on-farm prior to investing, but expected to explore more sales options after investment (e.g., farmers markets).

Conclusions—Although a relatively high percentage of participants were already involved in honey production, many considered their prior experience as a hobby. Investments helped many shift their thinking from hobby status to more of a commercial venture. Equipment investments should pay dividends for several years. Modest returns are expected and may take more time than in other investment areas to recover investment costs. Many of the investments are not intended to necessarily increase revenue significantly, but are intended to improve efficiency and quality. Small animal goals appear to have been achieved by the honeybee investment area.

Recommendations—*Questions regarding type of operation should employ a dropdown menu with hobby, commercial or other as options. Producers should be asked if their operation will be commercial after investment. Previous years sales should be followed by projected sales for ease of tabulation. Production levels should be in a single unit of measurement, if possible. The after investment marketing question should follow the before question. No program changes are recommended.*

Rabbits

Eligible Cost-share Items—Commercial bred New Zealand White or Californian breeding stock; cages or wire to make cages; automatic (nipple) water delivery system, including line, regulators, medicators, and pumps; feeders, nest boxes; materials to construct manure handling system; ventilation equipment such as fans, curtains, heaters, air conditioners; transport cages; and standard cost-share items.

Analysis of Impact—The three reports from the rabbit investment area were below the number needed for accurate assessment of impact of this program. However, actual participation was approximately 44 participants. Cost-share investments averaged \$1,316 for rabbit projects with producers investing on average an additional \$1,437 or 9% more than cost-share funding. Rabbit cost-share investments are 0.65% of the total agricultural diversification program investment. No prior or projected gross sales were available for comparison.

Conclusions—Data were insufficient to determine the viability of this investment area. However, it is suspected that, for the 44 participants, the goals of the small animal program were met. The viability of this investment area could not be determined.

Recommendations—*Questions regarding total annual sales before and after cost-share are needed to assess impact. However, number of breeding males and females, rabbits purchased, and average weight of rabbits marketed are not as important for measuring impact and may generate variable data.*

Production of Commercial Ornamental Horticultural Products

Eligible Cost-share Items—Seed and rootstock; soil, media for plant production; transplanting equipment; fertilizer and soil amendments; plastic or plasticulture supplies and plastic laying equipment; water and irrigation supplies; containers for growing plants; boxes, labels and packaging for transport and sales; pesticide; commercial spraying equipment and related protective gear; harvesting equipment, including mechanized tree spades; cooling equipment; refrigerated and non-refrigerated equipment for transporting product; and standard cost-share items.

Investment Area Goals—To assist in the development within the Commonwealth of an ornamental horticultural product industry, including landscape plants and fresh and dried flowers; to encourage farmers to establish ornamental horticultural operations on their farms; to assist farmers already engaged in ornamental horticulture to expand their operations.

Analysis of Impact—Of the 354 participants in the commercial ornamental horticulture products investment area, 64 reports were analyzed. Cost-share investments averaged \$2253 with producers investing on average an additional \$3,434 or 52% more than cost-share funding. Commercial ornamental horticulture products cost-share investments are almost 9% of the total agricultural diversification program investment. Eighty-one percent indicated that they would have made the investment without cost-share support. Average farm size for participants in this program was 98 acres, but ranged from less than one acre to 450 acres. Seventy-five percent indicated that they had a commercial ornamental horticulture operation prior to investment. Types of operations before investment were highly variable and no single type stood out among those indicating that they were already involved in commercial ornamental horticulture. Of those responding to questions regarding before and after estimates of gross sales, average gross sales were expected to increase from an average of \$34,625 to \$49,241, a 42% increase. Those who answered that they were not previously involved in a commercial operation projected sales of almost \$40,000 after investment. The average single season increase in gross sales of almost \$15,000 more than doubled the average investment cost of \$6,402. An average increase in sales of \$20,929 after investment was calculated from both those with and those without prior involvement and adjusted by the number in each group. Marketing strategies were primarily on-farm sales (62%) prior to investment and are not expected to change drastically after investment, with the exception that producers expect to explore more marketing options in addition to on-farm sales.

Conclusions—Although only 25% used the cost-share investments to get into the commercial horticulture business, others used the investment to diversify by pursuing other types of horticultural crops. These investments are expected to continue to produce similar improved returns for many years. Returns on these investments could be more than ten times the investment cost over the life of the cost-share improvements.

Recommendations—*Reports on production level before and after investments in commercial ornamental horticulture yields no valuable information for assessing impact and should not be collected. Total gross sales are sufficient for analysis. Sales per crop are inconclusive and not useful for impact assessment. Production levels either before or after investment were reported in various forms including trees, mums, acres, greenhouses, flats, and hanging baskets, and were not useful for analysis.*

The commercial ornamental horticulture program produced some of the highest returns on investment. Investment area goals were achieved, but further investment in this area is advised.

Poultry Production: Pastured and Other Fowl ²

Eligible Cost-share Items—Commercial breeding stock; feeders, waterers, brooders, poultry coops, nesting boxes; poultry netting and other temporary fencing; grazing cages (field pens), rolling hen houses, skid mounted chicken houses; permanent pens and shelters (Other fowl, only); fruit trees for poultry feed source; egg processing and packaging equipment, including coolers and refrigerators; pasture / pen water lines or alternative water sources; refrigerated and non-refrigerated equipment (excluding motorized vehicles) for transporting product; and standard cost-share items.

Investment Area Goals—To enable farmers involved in poultry production to expand the scope of their enterprise and/or modernize their facilities in order to improve profitability; to encourage additional processes which will add value to the market price.

Analysis of Impact—Of 130 participants in the poultry production: pastured and other fowl investment area, 13 reports were analyzed. Cost-share investments averaged \$1,986 with producers investing on average an additional \$2,614 or 32% more than cost-share funding. Poultry production: pastured and other fowl cost-share investments are almost 3% of the total agricultural diversification program investment. Several commercial poultry reports were included with the pastured poultry and other fowl database, but were removed prior to analysis and moved to the commercial poultry database. Half of those responding indicated that they would have made the investment without cost-share support. Average farm size for participants in this program was 69 acres, but ranged from six to 168 acres. Seventy-five percent indicated that they did not have pastured poultry and other fowl operation prior to investment. However, a few producers had commercial poultry operations prior to investment in pastured poultry based on answers in their reports. Type of operation, breed, market, and production levels were not answered by many producers, while answers given were highly variable and not useful for determining impact. With few reporting prior pastured poultry operations, previous year sales were inconclusive. Some producers reported sales from their commercial operations as their previous year sales, which if included in the analysis would have highly inflated sales prior to investment. However, sales data after investment were not collected and therefore unavailable for analysis or comparison with prior sales. Eighty-nine percent utilized farmers markets as at least one of their marketing options. Other marketing options used by those reporting were on-farm sales (44%) and direct-to-consumer sales (22%), as well as one report of community supported agriculture (CSA) agreement and sales to a restaurant.

Conclusions—The pastured poultry and other fowl investment area definitely meet the criteria of a diversification program. Most of those that participated were new to this enterprise. Two producers appeared to be commercial poultry operators prior to investment based on other data submitted. However, this also qualifies as a diversification into another type of production. The goals established by the ADB were achieved by this investment area.

Recommendations—*Having two poultry model programs appears confusing to producers with reports ending up on the wrong form. It may also be confusing for those compiling the data, since some*

²Other fowl are listed as squab, pheasant, quail, chuckar, partridge, guinea fowl, water fowl and pea fowl.

reports were submitted on the correct form, but compiled with the wrong model program. Reporting forms do not have any questions regarding projected sales for pastured poultry like other program reporting forms do. Breeds raised and products produced do not aid in impact assessment. The question regarding benefits the cost-share had on their operation is vague and was interpreted numerous ways by producers generating various forms of answers that cannot be analyzed into meaningful results.

Investments in the poultry production (pastured and other fowl) should be continued and help with expansion of markets is advised.

Commercial Vegetable, Mushroom, and Herb Production

Eligible Cost-share Items—Seeds, seedlings, spores, cuttings and transplants; soil, media for plan production; containers for starting/selling herbs; fertilizer and soil amendments; plastic or plasticulture supplies and plastic laying equipment; water and irrigation supplies; boxes, labels and packaging for transport and sales; pesticide; commercial spraying equipment and related protective gear; cooling equipment; sorting/grading equipment; refrigerated and non-refrigerated equipment for transporting product; specialized harvesting equipment; and standard cost-share items.

Investment Area Goals—To develop new revenues by assisting farmers in small acreage production of vegetables, including edamame, mushrooms, and herbs for sale through any commercially viable method; to enable farmers not previously engaged in vegetable or herb production to determine its economic feasibility for their particular operation; and to allow producers already engaged in vegetable or herb production to expand their operation.

Analysis of Impact—Of the 960 participants in the commercial vegetable, mushroom, and herb investment area, 155 reports were available for analysis. Cost-share investments averaged \$1,611 with producers investing on average an additional \$2,215 or 37% more than cost-share funding. Commercial vegetable, mushroom, and herb cost-share investments are over 17% of the total agricultural diversification program investments, more than most stand-alone programs. Eighty-five percent indicated that they would have made the investment without cost-share support. Average farm size for participants in this program was 123 acres, but ranged from less than one acre to 800 acres. Eighty-six percent indicated that they had a commercial vegetable, mushroom, or herb operation prior to investment. Sixty-seven percent described their operation type as multiple with 9% indicating that their operation was other than the 20 types listed on the reporting form. Nine percent indicated that they grew tomatoes, four reported growing pumpkins, three each reported corn and asparagus, two each reported beans and melons, and there was one report each for peppers, greens, and gourds. Prior or projected product levels and acres were so variable that analysis was not possible. Of those reporting prior sales and projected sales, sales were expected to increase from an average of \$33,913 to \$37,944, a difference of \$4,041. This difference indicates that producers of commercial vegetables, mushrooms, and herbs paid for the total investment in slightly less than one year. These investments will likely continue to generate benefits for several years. Producers indicate that their marketing plans will change little due to cost-share investments.

Conclusions—While most participants were already in the commercial vegetable, mushroom and herb business, they used cost-share funds to diversify within this business and to expand their

operations. However, the program did not entice many new producers. The returns on investment were high for this investment area. Investment area goals were achieved.

Recommendations—Commercial vegetable, mushroom and herb producers tend to be diversified and most often will grow multiple types of produce. Therefore, asking those questions either prior to cost-share or after may not generate useful data and could be removed from the reporting form. Prior or after cost-share production levels for operations that are diverse by nature tends to generate data that cannot be easily analyzed or evaluated. The current reporting form asks total commercial acres. This is an improvement over acres of the main crop, crop number two, and crop number three, which were of little value for this report. Marketing strategies were not expected to change drastically after investment with the exception of a slight increase in favor of farmers markets over multiple marketing options.

This investment area is large enough to be a separate diversification program.

Sod Production

Eligible Cost-share Items—Seeders, finishing mowers (non-motorized), turf tires, net layers, tillers, rollers, trailers, sprayers, spray tips, irrigation equipment, nurse tanks, sweepers, aerators, and standard cost-share items.

Investment Area Goals—To develop new revenues by assisting farmers in production of sod for sale through any commercially viable market. To enable farmers not previously engaged in sod production to determine its economic feasibility for their particular operation. To allow producers already engaged in sod production to expand their operation.

Analysis of Impact—No data were available for analysis.

Conclusion—Since no data were available for this investment area, it appears that this area has not been used.

Recommendations—With no data reported, it is unclear whether this investment area has been utilized. If in fact no producers are using this program, it could be dropped from future county model program options. If it is retained, questions regarding previous sod operations prior to cost-share and before and after sales would be valuable data for future reports for this model program. Production levels before or after cost-share may generate variable answers and could be eliminated from reporting. Marketing options either before or after cost-share may be more limited than with other products and may not generate useful data.

Efforts are needed to generate participation in this area or the area should be dropped.

Commercial Poultry Diversification Program

(Established December 2006, Updated November 2007)

Eligible Cost-share Items—Equipment for litter management; insect sprayers/cleaning and disinfection equipment; compost equipment/mortality disposal equipment; energy saving equipment and building modifications; building modifications and equipment to improve profitability and net

income; alternative water sources; litter storage buildings for producers in counties where local boards have not made it a priority; refrigerated and non-refrigerated equipment for transporting product; and standard cost-share items.

Program Goals—To enable farmers involved in poultry production to expand the scope of their enterprise and/or modernize their facilities in order to improve profitability; assist farmers who have not previously been involved in poultry production; to encourage additional processes that will add value to the market price; and to impact producers affected by loss of income resulting from cuts in tobacco quota.

Analysis of Impact—Commercial poultry reports included with the pastured poultry and other fowl database were added to the commercial poultry database prior to analysis. Investments totaled \$114,783 or 0.1% of total county model program investments for commercial poultry programs, with 35 participants averaging \$3,280 per project with producers investing on average an additional \$10,517 or three times more than the cost-share investment. Ninety-four percent of those responding indicated that they would have made the investment without cost-share support. Those indicating that they would have made the investment without cost-share support reported the smallest farm sizes. Average farm size for participants in this program was 139 acres, but ranged from six to 825 acres. All of those participating in this program were already involved in commercial poultry production. Too few responded to the question regarding type of operation for results to be meaningful. Most producers responding to both prior to cost-share sales and projected sales reported no change. Only one producer indicated that they expected sales to increase. That increase was projected to be six times that of prior sales. That same producer indicated that they would not have made the investment without cost-share. However, with most producers contracting, gross sales may not be the area where returns are realized. There were no questions on reporting forms that address other benefits such as labor savings. Half of those reporting indicated that they were contracting. Others were marketing wholesale (25%) or through cooperatives (25%). Marketing plans were not expected to change after cost-share. Production levels were reported in both numbers of birds or flocks and, therefore, could not be normalized for analysis. Those reporting production levels as number of birds indicated that almost 12.5 million birds were impacted by cost-share investments.

Conclusions—With contract sales the norm for commercial poultry producers, benefits may be primarily labor savings rather than an increase in sales. None of those reporting participation were new to commercial poultry production. Size of typical investments is not substantial enough for producers to consider starting a new commercial poultry operation. Although other goals were met, the goal to assist new producers may have been overly optimistic.

Recommendations—*Since all participants reporting were already in the commercial poultry business, this program does not fit as a diversification program. Current questions on reporting forms do not match the database analyzed, indicating recent changes to report forms. A question regarding expected economic impact in dollars and expected labor savings would improve assessment of impact.*

The commercial poultry program should not be billed as a diversification program.

Dairy Diversification Program

(Established December 2004, Updated November 2007)

Eligible Cost-share Items—Milking equipment and generators; feed ways, forage mixers, feeding equipment systems, automatic waterers; calf hutches, palpation rails, free-stall mattresses, specialized equipment for bedding free stalls; cooling fans and sprinkler systems; renovation of existing dairy barns or existing tobacco barns into dairy facilities; construction of new dairy facilities or calf raising facilities where no buildings exist for renovation; animal and raw milk transport equipment (excluding motorized vehicles); cooling and raw milk storage equipment; manure collection and distribution equipment (excluding manure spreaders); and standard cost-share items.

Program Goals—To encourage and assist existing and new dairy producers throughout the Commonwealth in renovating and modernizing dairy facilities; encourage research and science-based decisions for the creation, management and expansion of these programs; and to impact producers affected by loss of income resulting from cuts in tobacco quota.

Analysis of Impact—Data indicated that the investment was \$1,235,060 or 1.2% of all county model program investments with 411 participants. Cost-share investments averaged \$3,251 with producers investing on average an additional \$5,259 or 62% more than cost-share funding. Of those, 157 reports were available for analysis. Ninety-three percent of those responding indicated that they would have made the investment without cost-share support. Farm size was not available for analysis. All but one producer of those reporting were already involved in dairy production. Twenty-eight percent described their operation as pasture based only, 19% were dry lot and stored feed only, and the rest (58%) indicated both types. Average cow herd size was expected to increase from 75 head before cost-share to 84 head after. Average heifer numbers were expected to increase from 58 head before cost-share to 66 head after. Milk production prior to cost-share investment averaged over 1 million pounds, but was projected to increase by 11% to just over 1.2 million pounds. Annual sales were projected to increase by almost 17% from an average of \$204,317 to \$238,600 after cost-share. Sixty-nine percent were marketing through cooperatives, 19% were selling to independent processors, 5% through direct contract, and 6% reported other types of marketing. None of the producers indicated that their marketing source would change after cost-share. When asked about benefits from cost-share investment, producers gave numerous answers. A quarter of those answering mentioned improvements in efficiency, 20% stated improvement in feed efficiency, 16% felt that herd health was improved, 13% noted increases in production, 12% saw improvements in quality, 12% felt that cow comfort was improved (which has been proven to increase production), 7% reported higher profits and others reported improvements in equipment, facilities and hauling. Percentages do not add up to 100% due to some producers listing multiple answers. Some of those benefits would: improve efficiency by reducing feed loss, improve cow comfort, reduce labor and save fuel through improvements in equipment, facilities and hauling, and improve herd health by reducing disease and stress.

Conclusions—Items purchased in this cost-share area could not be determined from the data supplied. Producers gave other improvements besides increased sales as benefits. This program did not encourage new dairies, but the size of typical investments is not substantial enough for producers to consider starting a new dairy. Pursuing other markets is not a likely area for diversification either. A few dairy producers appeared to be reaching investment caps.

Recommendations—As more dairy producers reach caps, the future of this program must be considered. This program should not be billed as a diversification program.

Goat and Sheep Diversification Program

(Established August 2001, Updated December 2005)

Program Goals—To assist numbers of producers to diversify into goat/sheep production; position goat/sheep production as a viable and complementary income source for Kentucky livestock and tobacco producers; promote animal health and encourage science-based solutions to obstacles of goat/sheep production; improve the wool quality of Kentucky sheep flocks; encourage the development of goat/sheep production, marketing, and value-added infrastructure; and improve the genetic base of Kentuckys goat herds and sheep flocks.

General Analysis of Impact—Investments in the goat and sheep diversification program totaled \$3,323,767 and accounted for 3% of total model program investments. There were 4,294 participants in the combined program. Separate investment or participant data for goats and sheep were not available. However, it was clear that the participation in the goat part of the program was significantly higher than that for sheep. Cost-share investments averaged \$774 for this program. Producers average investment per cost-share project was not available, but at least an average producer investment of \$774 was required. Databases for goats and sheep were separate and will be discussed separately.

Goat Diversification

Eligible Cost-share Items—Goat handling, buck/semen purchase, buck lease, breeding female purchase, and dairy facilities

Analysis of Impact—A total of 260 reports were analyzed for the goat portion of the goat and sheep diversification program. Numerous lines of duplicate data were removed prior to analysis. Most were from multiple participation in the program where only one entry contained statistical data. Unique data was retained. Farm size averaged 105 acres for participants in the goat diversification program, but ranged from three to 1300 acres. Seventy-six percent indicated that they were involved in goat production prior to cost-share investment. Producers indicated that the breeding doe numbers increased from an average of approximately 23 to 33 head, a 39% increase. They indicated that the difference in doe numbers were the same as does purchased with cost-share funds. Average buck numbers prior to cost-share were 1.5 per farm, but increased slightly to 1.8 after cost-share, a change of 18%. Participants marketed 27 goats on average with an average weight of 61 pounds prior to cost-share at an average price of \$109 per head grossing an average of \$2,891 per participant. Producers who responded to market type prior to cost-share investment listed stockyards as the primary marketing outlet at 63%, on-farm sales at 34%, tel-o-auction at 10%, with graded sales, private sales, internet sales and other listed less frequently. Many gave multiple answers and percentages will not necessarily add to 100%. Producers indicated that they would still prefer stockyards (57%) after investment, but indicated a slight drop in utilization of that option. On-farm sales (19%) were expected to drop significantly in favor of direct-to-consumer sales (20%), an option rarely mentioned in prior sales. Smaller increases were expected in tel-o-auctions (15%), graded sales (7%) and internet sales (5%). Almost half of the producers indicated more than one marketing plan.

Conclusions—While the total investment in the goat and sheep diversification program is relatively small, a large number of producers were impacted. Typically, cost-share items are less expensive than those for cattle. The actual impact is difficult to measure due to the lack of specific data regarding projected gross sales after cost-share and producer investments. Data from the goat and sheep programs were pooled, which made analysis difficult. Although only 24% were new to goat production, producers were diversifying into more markets than prior to investment. Some of the benefits may also impact herd health, ease of handling and improved genetics within the herd. Goals for the goat part of the program were achieved.

Recommendations—*Questions about projected gross sales typically asked on other program reporting forms were absent on the goat form. Other questions regarding numbers of breeding does and bucks, number of goats marketed, average weight prior to investment are not as relevant for impact assessment. Projected changes would be more relevant.*

Sheep Diversification

Eligible Cost-share Items—Sheep handling, ram/semen purchase, ram lease, breeding female purchase, and wool.

Analysis of Impact—A total of 35 reports were analyzed for the sheep portion of the goat and sheep diversification program. Duplicate data were removed prior to analysis. Farm size averaged 61 acres for participants in the sheep diversification programs, but ranged from five to 250 acres. Seventy-seven percent indicated that they were involved in sheep production prior to cost-share investment. Producers reported that the average number of breeding ewes increased from an approximately 48 to 53 (10%). However, they purchased on average eight breeding ewes indicating stock losses, sales, etc. Average ram numbers prior to cost-share were slightly less than four per farm on average, but decreased to an average slightly more than one after cost-share, a decline of 69%. Participants marketed approximately 36 sheep on average with an average weight of 101 pounds prior to cost-share at an average price of \$99 per head grossing an average of \$3,539 per participant. Producers who responded to market type prior to cost-share investment, listed stockyards as the primary marketing outlet at 53% and on-farm sales at 27%. Other marketing options included direct-to-consumer, graded sales, and private sales. Producers indicated that they would still prefer stockyards (35%) after investment, but indicated a drop in utilization of that option. On-farm sales (16%) were expected to drop also in favor of various other options that included tel-o-auction, internet, organic and other value-added options.

Conclusions—The sheep portion of the goat and sheep diversification program is small in comparison to the goat portion and impacts fewer producers. This in no way diminishes the impact that it has had on the participating sheep producers. However, the actual impact is difficult to measure due to the lack of specific data regarding projected gross sales after cost-share and producer investments. Total sheep program participants and actual expenditures could not be separated from goats from the data received from the GOAP. Although only 23% were new to sheep production, producers were diversifying into more markets than prior to investment. Some of the other benefits may impact flock health, ease of handling and improved genetics within the flock. There is no indication that the sheep diversification program has helped improve wool quality in Kentucky.

Recommendations—*Questions about projected gross sales typically asked on other program reporting forms, were absent on the sheep form, but are valuable for assessing impact. Other questions*

regarding numbers of breeding ewes and rams, number of sheep marketed, and average weight prior to investment are not as relevant for impact assessment. Projected changes would be more relevant. Answers to marketing type were inconsistent and had to be normalized prior to analysis. Participants gave multiple forms of the same market type.

Yarn sales questions were not available for this report, but could be useful for future assessment. However, a question remains as to the number of producers that will participate in this part of the program and how many would report yarn sales in the future. One producer mentioned yarn sales under markets, but specifics were not available. Projected gross sales of wool are important for assessment, if sufficient numbers can be generated to make analysis meaningful. The question in the reporting form on how much wool is incomplete and needs revising. The question should read “If yes, then how much wool did you market last year?”. Where the wool will be marketed allows those reporting to give inconsistent answers and many forms of the same answer. The same is true for value-added wool product types and market options for those products. Based on answers to sheep marketing, answers will be varied and difficult to analyze unless there is some direction in the form of multiple choice options.

Swine Diversification Program

(Established December 2004)

Eligible Cost-share Items—Materials to renovate existing swine facilities or existing tobacco barns into swine facilities; up-to-date equipment (ventilation, feeding, penning, etc.) to improve production efficiency; construction of new swine facilities where no buildings exist for renovation; purchase of hoop-structure buildings, or other loose-bedding housing systems, to be used for swine production or storage of bedding used in loose-bedding systems; feed ingredient and complete diet sampling equipment and analysis; purchase of boar semen to improve the genetic base of the swine herd; purchase of up to 20 high quality replacement gilts to improve the genetic base of the swine herd; equipment needed for on-farm collection, processing, storage, and utilization of semen in an artificial insemination program; equipment for on-farm pregnancy detection and body condition scoring of sows; and standard cost-share items.

Program Goals—To enable farmers who have not previously been involved in swine production to begin a swine enterprise; to allow producers already engaged in swine production to expand the scope of their enterprise and (or) modernize their facilities; encourage research and science-based decisions for the creation, management and expansion of these programs; and to impact producers affected by loss of income resulting from cuts in tobacco quota.

Analysis of Impact—Participants totaled 17 in the swine diversification program, but only eight reports were available for analysis. Cost-share investments averaged \$2,795 for swine diversification programs. Producers total investments per cost-share project were not available for calculating an average, but at least an average producer investment of \$2,795 was required. Only one producer indicated that they would not have made the investment without cost-share support. Average farm size for participants in this program was 223 acres, but was inflated by the small number of reports and one large producer with 875 acres. The average drops to 130 acres without the large producer and ranges from 20 to 390 acres. All reported that they were swine producers prior to cost-share investment and had farrow-to-finish operations. Average breeding sow numbers were

significantly inflated by the large producer whose numbers did not change after investment. Other producers averaged 34 breeding sows prior to cost-share and 40 after. Average boar numbers did not change. Although the previous years sales were reported there were no projected sales figures for comparison. Number of sows marketed ranged from 100 to 70,000, but most reported in the range of 100 to 300. Average market weight was 217 lbs., although the average was suppressed by two low numbers. Median weights reported were in the range of 250-260 lbs. Marketing information was inconclusive due to the small number of reports.

Conclusions—The goal “to enable farmers who have not previously been involved in swine production to begin a swine enterprise” was not achieved if those reporting are typical of all participants. Not all producers may have access to the program, if a producers county council chooses not to offer this program. Typically producers are diversified and can participate in other cost-share programs.

Recommendations—*Prior and projected sales are important for impact assessment, but questions regarding projected sales were not on reporting forms. Breeding sow numbers, boars, sows purchase with cost-share investments, numbers marketed, average market weight, and where marketed are not as valuable for impact assessment. (Note: Breeding sows are not available for cost-share investment, but gilts are).*

This program should not be billed as a diversification program.

Other Model Programs

Farm Livestock Fencing Improvement Program

(Established March 2003)

Eligible Cost-share Items—Posts, fences, and supplies, including woven and wire fencing, not to include plank fencing or gates; no mechanized equipment will be eligible, except as provided by rental or contract; funds will reimburse material expenses and vendor labor.

Program Goals—Improve net farm income through improved pasture utilization for livestock producers; encourage boundary fencing repair or replacement to allow for expansion of contained pasture and forage up to the standard for livestock containment, thus increasing the herd size and carrying capacity of the farm; impact a high number of livestock producers; enhance the efficiency and utilization of the current Forage Resource Improvement and Utilization program.

Analysis of Impact—The farm livestock fencing improvement program was the sixth largest in term of investments of \$8,813,429 or 9% of total county model program investment with 4,674 or 6.5% of participants averaging \$1,886 per project. Seventeen hundred and three reports were analyzed. Some farms reporting cost-share investments for fencing had multiple types of livestock but, on average, farms reporting beef (84%) averaged 54 head, horses (14%) averaged eight head, stockers (13%) averaged 68 head, goats (7%) averaged 31 head, dairy (5%) average 65 head, and dairy heifers (3%) averaged 50 head. Others were reported but in such a manner that analysis was unproductive. Fifty-nine percent reported that they plan to renovate or establish new pastures averaging 35 acres as a result of the fencing program. The average number of pastures before and after cost-share investment could not be accurately determined due to numerous reports with

number of acres reported instead of number of pastures. This data issue could not be reconciled. Acres before investment averaged 96, but were expected to increase to 139 for an additional 45 acres or almost a 50% increase in pastures. Fifty-nine percent of producers expect to increase herd size, but not proportional to the increase in pasture acreage. They expected the average stocking rate for beef cattle to decrease to a more productive rate of 0.76 units per acre down from 0.9 units prior to investment. A reduced stocking rate can mean improved gains and increased net returns per head and can provide a potential extension of the grazing season which would reduce the need for stored feed (Kenny Burdine, personal communication).

Conclusions—The farm livestock fencing improvement program was highly successful, allowing farm owners to establish more pasture for their cattle and other livestock. This program primarily impacted beef operations, as did the major model programs. Net farm income was improved and pasture and hay fields were expanded. Carrying capacity was increased and improvements were made that may increase the grazing season, thereby reducing dependence on stored feed. This program attracted the sixth largest number of producers.

Recommendations—Type of fence was not available for review, but current forms ask for this input. Agricultural agents reported that in addition to barbed wire, woven wire, and high tensile, high tensile woven should be added to the options. If other livestock is an option under livestock type, separate reporting columns are needed for type and size for ease of tabulation and analysis. The questions regarding number of pastures before and after cost-share were misunderstood by many participants. This may not be easily resolved and, therefore, may need to be dropped in favor of total acres only. Producers who respond with a yes to the question regarding plan to increase herd size are asked to give how many. The question is vague and elicits responses of numbers only without stating livestock type, livestock type and number in one cell which are difficult to analyze, and various other inconsistent data.

Fencing other than perimeter fencing should be considered.

On-Farm Water Enhancement Program

(Established March 2003)

Eligible Cost-share Items—On-farm pond, subsurface aquifers/wells, on-farm spring piping, small stream water basin, and city/county water hook-up.

Program Goals—Impact a high number of producers affected by loss of income resulting from cuts in tobacco quota; present farmers with the opportunity to develop on-farm water enhancement systems to address limited water resources; ensure farmers engaged in crop and livestock production have access to water resources, which is imperative to maximize yields, increase production, control costs of production and improve net farm income; provide program guidelines that will ensure that any on-farm water enhancement plans that are implemented are in compliance with local, state and federal regulations.

Analysis of Impact—The on-farm water enhancement program had investments of \$1,477,188 or 1.5% of total county model program investments with 771 participants or 1.1% of total county model program participants averaging \$1,916 in cost-share investments per project. Producer contributions were not available for comparison. Three hundred and thirty reports were available for analysis. Average farm size was 194 acres with a range of three to 1,600 acres. Of the 15% who responded to the capacity of the water source most responded in acre feet. However it was unclear whether the response was actually in acre feet or merely acres. The average was 1.6 acre feet. Of those few reporting capacity in gallons per minute (gpm) the average was approximately 26 gpm. Ninety-six percent reported that the intended purpose of the cost-share investment was for livestock purposes only. Two percent indicated crop irrigation with another two percent reporting that it was for other purposes. Less than one percent reported that the investment was for both livestock and crop irrigation. Eighty-one percent were not participating in order to replace city/county water. However, of those that were participating to replace city/county water, the projected annual average savings of \$1,652 is almost equal to the cost-share investment. More than half (56%) will continue to use city/county water. Their reasons varied, but included limited or inconsistent water source due to drought (40%), the city/county water supply is their only source (20%), water quality is better for their livestock (13%), they like the convenience (9%), the city/county water supply serves as a backup to their other supply (7%), the city/county water supply allows them to take advantage of rotational grazing (6%), and 5% listed other reasons. More than half (51%) reported that they

do not fence their water source, but 55% were able to eliminate livestock access to streams on the farm. Participants averaged almost two additional watering points (1.7) per project investment. Two-thirds reported that they have changed to rotational grazing as a result of the cost-share investment.

Access to water is a major limitation for those wishing to reap the benefits of rotational grazing. The basic benefit of rotational grazing is more production per acre of pasture (Henning). More specific benefits include increased carrying capacity (0.5 to 0.67 cow calf units (Hoveland, McCann, Hill)), improved pasture utilization, and better distribution of nutrients across grazing areas. If an 80% weaning rate and a 450 lb average weaning weight is assumed, then the producer is able to sell 360 lbs of weaned calf per cow. At the higher stocking rate, this would mean an additional 61 lbs per acre. Assume that the price received is \$0.10 over cost of production per lb, and this increases profit per acre by \$6.10 (Burdine, personal communication).

The length of the grazing season is often also extended through rotational grazing, which lowers hay or winter feeding costs. If the assumption is made that an additional 30 days of grazing are gained through rotational grazing, and if hay costs are estimated to be about \$1 per head per day, feed savings would calculate to be \$20.10 per acre (using 0.67 stocking rate). Additional benefits could potentially come from lower pasture fertilization costs due to improved nutrient (manure) distribution and incorporation of legume or grass/legume forages (Burdine, personal communication).

Of the four producers who indicated that the intended purpose of their cost-share investment was crop irrigation, all reported a sprinkler type irrigation system. Cropping systems listed were different for each producer.

Table 44: *Livestock types indicated as the beneficiary of the on-farm water enhancement program.*

Type	Percentage cost-share farms	Average herd size	Average increase in herd size
Cattle	94%	59	8
Horses	5%	25	10
Goats	2%	26	37
Sheep	1%	27	5
Poultry	0.7%	463,425	–
Other	0.3%	35	–

Conclusions—As with the major model programs, the on-farm water enhancement program investments were primarily used for cattle operations. Quality water is an essential element of any livestock operation. Two years of drought have made water issues more critical. It is unclear how the drought may have negatively impacted the improvements that were made. The Kentucky Agricultural Relief Effort (K.A.R.E.) provided further assistance to make any adjustments needed.

New pasture development and adoption of rotational grazing are enough of a benefit to justify investment in this program. Recent droughts make producers less comfortable about their water sources, and they are not willing to give up the reliability and convenience offered by city/county sources after improvement of on-farm water sources.

Recommendations—The same list of livestock types as recommended for the livestock fencing improvement program should be used for the on-farm water enhancement program. Participants answered using various forms of answers (cattle, cows, equine, horses, etc) and most did not follow the breed examples given. However, it is not necessary to have specific breeds. Those reporting tend not to give breeds or, if mixed, tend to only list the type of livestock. A dropdown list containing major livestock types is recommended. Replacing their city/county water source does not seem to be a major reason for participating in this program and reporting of this could be dropped.

This program will continue to be significant as producers deal with drought issues and may need modifications to further assist them with drought relief.

Technology Program

(Established December 2004)

Program Goals—Improve net farm income through cost-share on technology that will improve farm operation efficiency. Impact a high number of producers affected by loss of income resulting from cuts in tobacco quota. Encourage research and science-based decisions for the management and expansion of technology-based initiatives. Assist producers already exploring the use of technology in their operations, as well as producers who are interested in exploring technology for their operations.

General Analysis of Impact—The technology program consisted of four investment areas: precision agriculture, animal data management, computer hardware and record management software, and satellite broadband. Investments of \$832,143 or 0.8% of total expenditures were awarded to 563 or 0.8% of participants averaging \$1,478 per project. Exact investments and the number participating for each technology investment area were not available.

Precision Agriculture

Eligible Cost-share Items—GPS monitor/receiver, GPS light bar/guidance system, GPS yield monitor, spatial analysis software/training (registration only), computer GPS hardware, variable rate application control equipment, and services related to spatial management.

Analysis of Impact—One hundred twenty-six reports were available for analysis of the precision agriculture investment area of the technology program. Average farm size was larger than for all other programs due to the nature of the cost-share items at 1,450 acres with a range of 31 to 8,000 acres. Forty-nine percent reported that they were not using precision agriculture technology prior to cost-share investment. Those reporting prior use of precision agriculture technology indicated that they were using yield monitors (44%), light bar (35%), spatial management services (13%), or other (16%) technology. There was no indication which type of technology that they were adopting through cost-share investment for comparison. When answering the question of how this technology would help/expand their current precision agriculture program, almost 80% answered with a yes rather than with an explanation. Those responding with an explanation gave various answers, but the central benefit was described as more accurate and efficient seeding and application of pesticides and fertilizers. Those reporting no prior experience with precision agricultural technology indicated that it would provide precise planting, fertilizing and spraying, expand use of GPS for mapping

and yield data recording, and provide crop insurance records. Other anticipated benefits included improve efficiency, accuracy, and cost reduction.

Much of the value of precision agricultural technology results from proper implementation. In some cases producers buy technology that after one season would never be used again. However, other producers are involved in innovative practices that would multiply benefits several times over. Lightbar technology has the potential to reduce input usage (as indicated by overlapped passes) by as much as 2-10%. The higher savings will be realized with spinner spreader equipment and with larger boom-type application machines. Automatic section control equipment has been shown to tremendously reduce input usage. One example is a producer who has an odd-shaped field where the savings were over 25%. Savings for typical Kentucky field shapes would be estimated at 10-15%. These technologies were not available early in the model programs, but more recently producers are beginning to adopt these technologies as input costs escalate. Yield monitor technology is one example where savings are variable. Many farmers will print nice maps, put them in a notebook and put them on a shelf. For them the value is zero. Others will analyze the yield maps, make decisions about management practices, and execute the changes. For them the value could be very high, especially when they find a previously undetectable problem (Tim Stombaugh, personal communication).

Conclusions—Half of the participants in this program were using the precision agriculture equipment for the first time, indicating a desire to improve efficiency. The primary participants in the precision agriculture investment area were larger producers but some producers in counties such as Taylor, Scott and Garrard also invested in precision agriculture indicating a wider acceptance and scope to this program. Value can be high, but proper use and training is essential. This may be an area where technological advancements may quickly render investments obsolete.

Recommendations—*The type of precision agriculture technology purchased is needed for comparison. The large size of the average acres for those participating in this program was expected, but did not benefit analysis. One question regarding how this program would help/expand or provide economic benefit for those with prior experience and those with no prior experience is sufficient.*

With the cost of inputs escalating this program is worth continued support.

Animal Data Management

Eligible Cost-share Items—Scale head, readers (panels, loops, wands, and portals), management programs (e.g. CHAPS), RFID tags purchased through KBN (e.g. CPH45 tags), and carcass data collection.

Analysis of Impact—Seven reports were available for analysis of the animal data management investment area of the technology program. The database contained responses from three questions: farm size (157 acres on average), average herd size (57) and whether participant submitted the qualifying list to the Kentucky Beef Network and received approval. One did not respond to the last question, but all others responded with a yes as expected, since this is required. No other data were reported.

Conclusions—Goals were achieved for this investment area.

Recommendations—*During the agricultural agents focus group, agents reported that producers were filling out the qualifying list and submitting it to the Kentucky Beef Network, but that approvals*

were often not returned. Agents requested that this requirement be dropped and that producers not be subjected to unnecessary reporting, if the Kentucky Beef Network does not follow through with approval. However, there was no indication that producers were denied funding due to lack of approval.

Computer Hardware and Record Management Software

Eligible Cost-share Items—Accounting software; tax preparation software; database / inventory management software; personal data assistant (PDA); laptop, personal computer, or other hardware upgrades; and one half the cost of participation in the Kentucky Farm Business Analysis Program.

Analysis of Impact—One hundred ten reports were available for analysis of the computer hardware and record management software investment area of the technology program. Average farm size was larger than average at 217 acres with a range of nine to 1,475 acres. Eighty-nine percent reported that they had completed a computer training course listing Quicken or Quickbooks (64%), Chaps (26%), Microsoft Excel (6%) which also included Microsoft Word in most cases, and other non-specific computer training (22%). Many producers participated in more than one type of training. Participants in this cost-share investment area described their computer skills as none (5%), minimal (29%), intermediate (38%), advanced (16%), and experienced (12%). Participants described their method of financial/farm business management before cost-share as handwritten ledger (70%), electronic/computer (23%), did not keep records (3%), and other (5%). Producers gave a wide range of answers regarding anticipated benefit but answers could be interpreted as either better record keeping (60%) or increased productivity (40%).

Conclusions—Although two-thirds described their computer skills as intermediate or better prior to training, 70% were still using a handwritten ledger and 3% were not keeping records. Better record keeping helps producers discover things about their farm business, get a better picture of their overall operation, track purchase and use of inputs on a particular enterprise, field, repair and/or maintenance generated for certain pieces of farm equipment, and helps farmers produce balance sheets, income statements, and cash flow budgets (Trimble, McAllister and Isaacs). It is difficult to assess the true benefits of record keeping, but good records are a key to determining business status and should be encouraged.

Recommendations—*The number of producers using handwritten ledgers or not keeping records is low and extra effort to improve this situation is needed.*

Satellite Broadband

Eligible Cost-share Items—Fifty percent of the cost of equipment and installation provided by a broadband provider not to exceed \$250.00 per producer. Fifty percent of the cost of broadband service for a period of one year not to exceed \$40.00 per month (\$480.00 for the one year) per producer.

Analysis of Impact—There were no data available for analysis.

Conclusions—With availability of other broadband access limited and the majority of agricultural support web-based, this investment area should not be dropped unless the availability of other sources are confirmed to provide more access than anticipated. However, no participation was apparent for this investment area.

Recommendations—Questions on the reporting forms are not specific and may elicit non-specific answers should a producer invest in this area.

Avenues to encourage computer connectivity should be explored. Providing 100% of the cost of equipment and installation and 100% of the first year may be necessary to get producer to pursue this unfamiliar technology.

Timber Production, Utilization, and Marketing Program

(Established December 2004)

Eligible Cost-share Items—Timber production and management; forest products utilization and marketing.

Timber production and management includes seeds and seedlings for transplant; weed control for tree plantings, treatments before and for up to three years after planting, to control weeds including chemical and mechanical treatments and the planting of ground covers suitable for tree plantings; water and irrigation supplies and equipment; layout and construction of permanent forest roads and stream crossings for long-term management, including construction of permanent best management practices on those road and stream crossings [One Pass Practice or General Forest Management]; construction of fire lines and lanes [One Pass Practice or General Forest Management]; Timber Stand Improvement (TSI) [One Pass Practice or General Forest Management] and practices such as thinning, release, control of invasive species, site preparation treatments for natural regeneration, and pruning for the purpose of improving timber quality and growth; and fencing for forest management for the purpose of restricting livestock from woodland area, not to include plank fencing.

Forest products utilization and marketing includes timber and lumber processing equipment, sawmills, portable or stationary planers, molders and other similar processing equipment; drying equipment and facilities including equipment for dry kilns, pre-dryers, dry sheds, air drying yards; and transportation and packaging equipment (excluding motorized vehicles) plus standard cost-share items.

Program Goals—To develop new revenue sources for farmers through growing and utilizing existing and new natural resources; to promote timber production and processing on rural lands and areas of farms not suitable for crop or livestock production; and impact a high number of producers affected by loss of income resulting from cuts in tobacco quota.

Analysis of Impact—The timber production, utilization and marketing program had investments of \$110,166 or 0.11% of total county model program expenditures with 36 or 0.05% of participants averaging \$3,060 per project. Twenty-nine reports were available for analysis. Average farm size was 213 acres with a range of 60 to 1,124 acres. Sixty-one percent reported that they were not in the timber business prior to cost-share investment. Answers varied concerning the type of operation and were non-conclusive. Average gross sales before cost-share were estimated at \$32,279, but were projected to increase to \$35,216, a difference of \$2,937. Production levels before and after cost-share were reported in various units and were non-conclusive. Producers marketed their timber products wholesale (46%), through on-farm sales (38%) and through other means (15%) before investment, but projected that they would favor on-farm sales (65%) after investment.

Conclusions—The timber production, utilization and marketing program attracted more new producers than current producers. Although few producers participated in the timber production program, it may not have been offered in many counties. This is an underutilized resource that many producers have but don't manage or consider as an asset.

Recommendation—*Participation in this program should be encouraged.*

Shared-use Equipment Program

(Established December 2004)

Eligible Cost-share Items —**Forage improvement**—no-till drills, pasture renovators, silage wrappers or baggers, in-line bale wrappers, pasture aerators, and round bale wagon; **cattle handling**—scales, chutes (loading, squeeze), crowding tubs, corral panels, and head gates; **goat handling**—portable corral pens, alley way, head chute and scale; **horticulture**—bed shaper, mulch/trickle tube layer, vegetable transplanter and plastic remover / plastic roller; **others**—tree planter, lime spreader for use on steeper ground, trailer for transporting shared-use equipment, thistle sprayer and compost turner.

Program Goals—Impact a high number of producers affected by loss of income resulting from cuts in tobacco quota; reach farmers who cannot justify ownership expenses associated with certain equipment; provide counties with limited resources options to serve a greater number of producers than other programs may allow; and help producers access technology necessary to improve their operations in an economical manner.

Analysis of Impact—Fifty-four counties reported participation in the shared-use equipment program with the majority (36) reporting multiple items. The total expenditure from ADB for 2001 through 2007 was \$1,125,985 with over 140 items reported by counties (some items contained multiple parts such as cattle handling equipment). Until recently 100% of the cost was supplied through the ADB with a 50% cost-share required at the time of submission. Therefore, additional total cost supplied by counties is not available, but is substantially less than that of the investment by ADB. Exact numbers are difficult to generate due to the number of years encompassed by the program and the self-sustaining nature of how most counties are administering the program. Fees charged to producers for the use, in some cases have generated enough revenue to buy comparable equipment while maintaining the initial equipment.

No-till drills or seeders are the most common type of equipment with 47 purchased in 34 counties. Twenty-six hay wrappers were purchased by 18 counties. However, some of those were purchased from generated revenue and not initial investments. Fifteen counties purchased 18 lime spreader buggies primarily to provide producers with access to steep ground. Fifteen counties purchased 17 sets of cattle handling equipment including, chutes, scales head gates, and panels. Seven counties purchased eight sprayers including one built for an ATV in Floyd County where terrain is more challenging. Four counties purchased vegetable production equipment including bed shapers, transplanters, and plastic layers and lifters. Four counties purchased five renovators; three purchased small livestock scales; three chain harrows; three purchased post drivers; two purchased manure spreaders; two purchased tree planters and two purchased posthole diggers. Other shared-use equipment included an ATV gravity feed spreader (also purchased by Floyd County for the same

reason as stated for the sprayer), a bale transport wagon, a conventional seeder (the county already had access to a no-till drill), a goat head catch, an instrument for checking breeding soundness for bulls (used by the local vet), a silage baler, a hay probe, a straw blower, and a no-till tobacco transplanter.

Typically, counties who bought more than one no-till drill opted to get at least one small and one large size drill. This gave producers more options and allowed those with smaller horsepower tractors to reap the benefits offered by improved forages. For those who only have a few acres to seed per year, the cost of owning is prohibitive. No-till drills reduce fuel consumption by removing the field preparation requirements of conventional seeders, reduce erosion on steep slopes, save time by reducing the trips across the field, and may improve carbon sequestration by increasing organic matter. By purchasing multipurpose drills producers could seed hay fields, renovate pastures or seed grain fields. Comments received from agricultural agents regarding the success stories from shared-use no-till drills include the following: “2,003 acres have been drilled by 90 landowners”; “there is such a demand for this type of equipment [even with] five units and there is still a waiting list”; “30 farmers used it last year and it is booked solid this year [and it is] expected to cover about 1000 acres”; “past two years, 61 farmers have seeded or renovated”; and “acre meter indicates that the drill has covered over 3,537 acres.”

Hay wrappers improve hay quality by allowing producers to bale hay under less than ideal conditions. Negligible dry matter loss occurs due to the ensiling process and wrapping reduces considerable dry matter losses that occur during normal handling of hay (18% on average) for conventional baling (Jimmy C. Henning, Michael Collins, David Ditsch, and Garry D. Lacefield). Some producers have seen such a significant benefit that they purchased their own wrapper or shared one with a neighbor. One county reported 5000 bales wrapped annually.

In most cases agents said that lime spreaders added accessibility to fields in their counties that previously were too steep for lime trucks to reach, improving productivity of pastures in those fields by improving soil pH. They also mentioned issues such as convenience, scheduling, and cost saving through bulk purchases.

The benefits for the cattle handling items did not differ from that of similar items reported under the cattle handling model program and will not be discussed here. Some producers who used the shared-use cattle handling equipment saw the benefits and purchased their own with cost-share help through the cattle handling program. Vegetable equipment was used for demonstration purposes and allowed those with interest a chance to try vegetable production without the initial startup expense.

Benefits of other equipment are as expected.

Extension Agricultural agents promoted the benefits of shared-use equipment through demonstration, newsletters, and Extension publications.

Conclusions—The shared-use equipment program may have produced the most significant impact of all the county model programs. For the most part it is self-sustaining through the assessment of rental fees. Many counties have generated enough revenue to purchase new equipment while maintaining existing equipment. Many counties not using this program are missing out on the improvement in production practices offered by shared-use equipment. However, finding an organization within a county willing to administer the shared-use equipment may be a limiting factor.

Concern regarding liability, time administering the pickup, delivery and inspection of the equipment, and the collection and accounting of the fees assessed may prevent some county groups from assuming the responsibilities.

Recommendations—*The 50% cost-share requirement should be reconsidered. This requirement violates shared-use equipment objective three which states that this program should “provide counties with limited resources options to serve a greater number of producers than other programs may allow”. Limited resource counties may not be able to generate the required 50% match.*

Summary

County model programs have been highly successful in improving producers knowledge, farming operations, and net returns. The program was designed to reach a maximum number of former tobacco producers and was highly successful in achieving that goal. Counties have contributed by imposing guidelines to distribute funds to as many producers as possible. County councils were given autonomy to choose the types of programs that best served their counties. However, the primary area of emphasis has been the beef industry which has benefited either directly or indirectly from approximately 70% or \$70 million of the cost-share funds invested by the ADB. Producers have moved from a high dependence on tobacco to a high dependence on beef cattle. Any downturn in the beef industry could have devastating consequences for some producers and the agricultural economy of the Commonwealth.

Significant growth in production knowledge and implementation of improved practices on producers farms can be attributed to six program areas: forage improvement and utilization; cattle genetics improvement; cattle handling facilities; hay, straw, and commodity storage; farm livestock fencing improvement; and on-farm water enhancement. While ADB and producers investments are the most significant contributing factor to the growth, educational programs and investment guidelines that required improved practices cannot be ignored. Not only have the county model programs bolstered the infrastructure of Kentucky agriculture, it has provided the knowledge base for producers to make informed decisions as input costs, production and demand are influenced by weather, the economy, health issues and consumer preferences.

Since the majority of the funds distributed were for a few programs, many participants are approaching investment caps. Considerable thought should be devoted to how future funds will be invested as numerous producers reach the investment caps. If caps are impediments to future progress, are they in the best interest of the agricultural community? An example of this problem can be seen in the cattle genetics improvement program where many producers are reaching the \$5,000 cap for bull/semen purchases. The cattle genetics improvement program, in the opinion of many, inflated the price of high quality bulls by up to 100% of the price before the program. As producers reach the investment cap for participation they will have to purchase future quality bulls in an inflated market or regress to the inferior bulls purchased prior to the program. While the numerous benefits of using a superior bull should be evident, it is feared that some of the advancements that have been realized could be lost. While removing investment caps is not advised, close evaluations are needed to make sure that current levels are not restricting producer advancement.

As those caps are reached by beef producers creating less of a demand for investments in the major programs, there will be a need to shift those funds to other programs. However, it is unclear as to how much of those funds can be utilized by producers looking to diversifying into other commodities. While there have been numerous examples of programs that have had significant success, the degree of involvement is still relatively small in comparison to that of beef cattle.

Some programs billed as diversification programs are clearly not generating new producers or establishing new marketing options. The nature of the commercial poultry, swine, and dairy industries do not provide the right environment to entice many new producers or provide other forms of marketing or production diversification. They are viable programs but should not be billed as diversification programs.

The equine, goat, fruit and sorghum, vegetable, mushroom and herb, commercial ornamental horticulture, and pasture poultry and other fowl are effective programs and have contributed to the diversification of producers in Kentucky. Agri-tourism, certified/commercial kitchens, greenhouse conversion/construction, honeybees, rabbits, sheep, technology, and timber programs have made modest contributions, but aided few producers. In some cases, access to the programs may be an issue. An example is the certified/commercial kitchens which has tremendous potential, but has been utilized by only a few producers in a few counties. These programs need re-evaluation to determine ways to improve access or increase participation.

Commercial aquaculture, sod production, and satellite broadband have had little success and these programs need re-evaluation to determine ways to promote the programs and to increase participation. However, if there is little demand for programs like sod production, then those should be dropped from the program.

The shared-use equipment program may be the most successful program of the county model programs. It provides producer access to equipment that they could not otherwise justify purchasing, allowing them the benefits without the initial expenditure. Loan fees helped generate maintenance funds and in many cases, the ability to eventually replace the original equipment. This makes the shared-use equipment program highly sustainable.

General Recommendations

The Social Security Number and Tax Identification Number should be removed, if possible. Many people are worried about identity theft, and the information is already provided on certification forms.

Attempts should be made to reduce the size of reporting forms and reduce reporting errors in the future. Dropdown menus with optional answers for questions are recommended where multiple choice answers are appropriate and would improve recording efficiency, provide uniform data that can be easily sorted, and prevent misspelling. Units expected should be included on production level question, if they are included on report forms. Farm size adds little to the analysis. Questions regarding benefits of cost-share to a producers operation are vague and are often misinterpreted by producers. The type of answer desired should be indicated. Various forms of the same answer are impossible to analyze and do not produce meaningful data.

The different programs within a program or investment area (e.g. forage/pasture/grain improvement, filter fabric pads; bulls, heifer improvement; and hay, straw, or grain) should be reported separately. This would minimize the size of individual reports and decrease reporting errors, such as data in wrong columns, commonly encountered in this analysis. Responses to operation type, what was produced, previous and projected years production levels were variable, do not provide usable data, and these questions could be dropped to improve reporting efficiency.

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Part III: The Kentucky Agricultural Finance Corporation

Background

The Kentucky Agricultural Finance Corporation (KAFC) was created by statute in 1984 but facilitated its last farm purchase in 1991 before entering a period of dormancy. The Linked Deposit Program was created in 1996, and the KAFC was authorized to administer the agricultural component. In 2002, the ADB considered KAFC as an option to provide access to capital for agricultural diversification and infrastructure projects as part of the *Long-term Plan for Agricultural Development*. In order to carry this out, the ADB awarded KAFC \$20 million in 2003 from the funds provided by the Master Settlement Agreement (MSA) but under the administration of the Kentucky Department of Agriculture (KDA).

KRS 247.940-247.978 detailed the original intent and operations of the KAFC under the KDA. During the 2004 General Assembly, Senate Bill 146 amended KRS 247.940-247.978 to restructure and move the administration of the KAFC to the GOAP from the KDA. The ADB subsequently awarded KAFC an additional \$3 million in 2006 and another \$3 million in 2007.

The KAFC is governed by a twelve member board. Ten members are appointed in staggered four year terms by the Governor. These ten board members may include two officers from a commercial lending institution, an officer from a farm credit association, an agricultural economist and must include a tobacco farmer, a cash grain farmer, a livestock farmer, a dairy farmer, a horticulture farmer, and someone from the equine industry. The Governor must also appoint a member of the ADB who meets the qualifications and takes the place of one of the aforementioned positions. The other two members include the Commissioner of the Department of Agriculture, who shall serve as chairperson, and the Secretary of the Finance and Administration Cabinet. The Executive Director of the ADB also serves as Executive Director of the KAFC Board. KAFC Board members approve all projects, except in the Agricultural Infrastructure Loan Program (AILP) where loans under \$50,000 having a certain credit score may be approved by the staff loan review committee.

When GOAP began administering KAFC in 2004, the main staff person in charge of the corporation was the Marketing and Business Development Coordinator. Today, the KAFC has three main staff members. The Director of Financial Services manages loan portfolios and marketing, communicates with lenders, and assists with financial analysis for both ADB and KAFC

applications. The Financial Records Specialist receives the applications and completes an initial review of applications for completeness and eligibility under the guidelines. A Special Projects Coordinator assists with internal data management and processes for KAFC, as well as process repayments. Additional GOAP staff assistance is provided to KAFC, as needed, including General Counsel, Director of Communications, the Fiscal Officer, and the Senior Policy Analyst.

When the KAFC was originally created in 1984, the primary intent was to make funds available to young farmers wanting to purchase farmland. Today, the KAFC has four primary loan programs funded by the ADF. These programs include the Agricultural Infrastructure Loan Program and Beginning Farmer Loan Program (BFLP), which are indirect loan programs, and the Agricultural Processing Loan Program (APLP) and Coordinated Value-Added Assistance Program (CVALP), which are direct loan programs. Indirect loans must be originated and serviced by participating lenders. Direct loans can be made between KAFC and the recipient without an outside lender involved. To date, KAFC has approved 249 projects and committed over \$26 million. Of the 249 total projects, one is a CVALP, six are APLP loans, 43 are Beginning Farmer loans, and 199 are AILP loans. All four programs are designed to provide access to below market financing for individuals or companies in Kentucky related to agriculture in order to enhance farming operations and profitability. The loans are distributed in a manner that will allow these funds to be preserved and continued to be utilized in the future.

The **Agricultural Infrastructure Loan Program** allows KAFC to offer loans to individual producers making capital expenditures for long-term agricultural projects involving capital improvements. Financing can be used for acquisition, renovation, and construction of on-farm agricultural structures. In order to be eligible for an AILP loan, applicants must receive at least 20% of his or her gross income from farming. Loan recipients with documented history of tobacco dependency can receive a fixed interest rate of 2% APR. Individuals who cannot document tobacco history receive a 4% interest rate. The term of the loan cannot exceed 15 years or the useful life of the asset being financed. KAFC will allow a loan up to \$250,000 not to exceed 50% of the project cost. Loans can be used for dairy, swine, beef, equine, poultry, grain, vegetable, or tobacco facilities; equipment storage; fencing; aquaculture structures; or other long-term structures at the discretion of the KAFC Board. Loans cannot be used for operating expenses or to refinance existing debt.

The **Beginning Farmer Loan Program** allows the KAFC to assist individuals with farming experience who desire to develop, expand or buy into a farming operation. Beginning farmers can use the loan to finance or purchase livestock, equipment, agriculture facilities, secure working capital, make a down payment on real estate, or invest in a partnership or LLC. In order to be eligible for a BFLP loan, applicants must have at least three years of experience in operating a farm, must substantially participate in these farm operations, and have not operated a farm for more than ten years. Applicant (and spouse, if applicable) must have a combined net worth of less than \$500,000 and commitment from a mentor to offer advice in their farming endeavors. All BFLP loans receive a fixed interest rate of 2% APR for up to 15 years. KAFC will loan up to \$250,000 for new investments.

The **Agricultural Processing Loan Program** can be utilized by companies and individuals interested in agricultural processing that add value to Kentucky grown agricultural commodities. Loans are available to entities pursuing capital expansion, construction, or renovation. Term length is not to exceed 20 years. KAFC has a statutory loan limit of \$1,000,000 per loan;

however, budgetary language increases this limit to \$5 million through June 30, 2010. Interest rate is determined on a per loan basis.

The **Coordinated Value-Added Assistance Program** provides loans to companies and individuals who create contract production opportunities for other agricultural producers. Funding can be used to renovate or expand existing facilities, acquire equipment or obtain permanent working capital to facilitate an expansion. KAFC will finance loans of up to \$1,000,000 with a limit of \$100,000 for each new grower opportunity created. Term length is not to exceed 5 years. Interest rate is determined on a per loan basis. Applicant can finance no more than 25% of their project through this program.

The **Linked Deposit Investment Program**, which originates from Kentucky's Unclaimed and Abandoned Property Account, provides funds to Kentucky banks for low-interest loans to Kentucky farmers. This program was not included in the evaluation since the funds do not originate from the ADB.

Summary of KAFC Loan Programs:

Agricultural Infrastructure Loan Program

- History of tobacco production to receive 2% interest rate
- 20% or more of income from farming for the last 2 years
- \$250,000 maximum amount and 50% or less of total project
- 15 year term limit

Beginning Farmer Loan Program

- Not operated a farm for more than 10 years
- Minimum of 3 years participation in business operation of a farm
- Combined net worth of less than \$500,000
- Applicant off-farm income of less than \$75,000 and \$100,000 for household
- \$250,000 maximum amount, 15 years or less
- 2% fixed interest rate

Agricultural Processing Loan Program

- Construction, renovation / expansion of processing facilities
- Must add value to Kentucky agricultural commodities
- \$5,000,000 maximum
- 20 year term limit
- Interest rate to be determined

Coordinated Value-added Assistance Loan Program

- Business expansion that will provide contract opportunities for KY farmers

- Facilities, equipment or working capital
- 5 year term limit
- \$1,000,000 maximum
- \$100,000 or less per grower opportunity created
- 25% of project or less
- Interest rate to be determined

In the spring of 2008, KAFC changed the maximum participation from \$100,000 to \$250,000 and the maximum term from 10 to 15 years for the AILP and the BFLP.

Evaluation Criteria for KAFC

The 2007 Annual Report for the KAFC makes clear that the Board supports the priorities of the ADB:

“Marketing and Market Development has been considered the top priority for the Kentucky Agricultural Development Fund. The KAFC Board also shares this vision of adding value to Kentucky grown agricultural commodities by providing below market financing to projects accomplishing these goals.” (Annual Report July 2006–June 2007, pg. 34)

However, the 2006–2007 Annual Report also restates that Priority #2 of the ADB, directly addressing financing and capital availability:

“Improving Access to Capital The Kentucky Agricultural Development Board recognizes that, while capital sources are generally available to producers, commercial lenders might be reluctant to provide financing for products and businesses where there is limited financial history. To address this concern, the Board supported the reactivation of the Kentucky Agricultural Finance Corporation.” (pg. 6)

Therefore, the evaluation criteria for the KAFC loan programs should be similar to the criteria used to evaluate the Non-Model investments, as expressed in the ADB investment philosophy: increasing net farm income, affecting tobacco farmers and tobacco-impacted communities, and market development (i.e., stimulating new markets, adding value to Kentucky products, and exploring new opportunities for Kentucky farms and farm products). In addition, the ADB seems to have intended the funds flowing to KAFC to provide capital to businesses with limited financial history.

Data Collection

In order to evaluate the effectiveness of KAFC loan programs, the UK Evaluation Team asked for a list of all loans for each program. From this list, the Evaluation Team was able to select

a representative sample of loans to review based on the type of loans, the purpose of the loan, and the geographic location of the applicants. Twenty loans were selected which represent a sample of approximately 10% of the 218 loans made, as of May 2008.

A UK student intern was assigned to work in the KAFC office in Frankfort to assemble background files for each of the loans to be evaluated. Typically the file consisted of KAFC documents including the loan application, a loan application summary sheet, a narrative describing the applicants experience in farming, and the loan request (usually written by the participating lender), correspondence from the participating lender, a certificate of participation between KAFC and the local lender, and a loan closing verification form. Tax forms included in the KAFC files were not photocopied nor collected by the UK Team.

Survey Questionnaire

The survey questionnaire developed for the Non-Model Projects interviews was adapted for use with the KAFC loan evaluation. Using the same basic framework for the questionnaire, modifications were made to identify the specifics of the KAFC loans made, the activities funded by the loans, and an estimate of the resulting impacts from the loan. A separate version of the survey form was developed for borrowers and lenders in order to capture their respective points-of-view. All of the borrowers from the twenty sample loans were interviewed, as well as seven participating lenders. Most of the lenders had experience with multiple KAFC loans. A copy of the borrower and the lender interview survey forms is attached in Appendix A.

Site Visits and Interviews

The UK Evaluation Team traveled to the project site for each loan included in the KAFC sample in order to see first-hand the results of the loan and personally interview the applicant. The map below shows the locations of the site visits and interviews for the KAFC loan sample.

Survey Briefs and Impact Data Collection

Each site visit and loan interview was summarized into a one page survey brief in order to give a concise view or “snapshot” of the purpose of the loan, the loan conditions, and an evaluation of the loans potential impact. The KAFC loan survey briefs for the twenty loans sampled are attached in Appendix B.

Survey Questionnaire Results

The results from face-to-face interviews with the KAFC borrowers and lenders were tabulated and are presented in the following tables (with the survey question preceding each table). In general, several general conclusions can be drawn from the survey results:

KAFC Site Visits

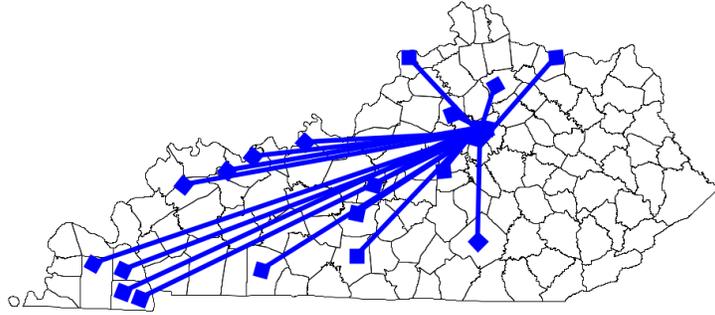


Figure 11: *KAFC site visits.*

A. The borrowers and lenders overwhelmingly agree (89%) that the ADF is a good use of the Master Settlement Agreement funds and that the ADB use of funds has been consistent with their investment philosophy: *“The Kentucky Agricultural Development Board will invest monies from the Kentucky Agricultural Development Fund in innovative proposals that increase net farm income and effect tobacco farmers, tobacco-impacted communities, and agriculture across the state through stimulating markets for Kentucky agricultural products, finding new ways to add value to Kentucky agricultural products, and exploring new opportunities for Kentucky farms and farm products.”*

Table 45: *Responses to: “Based on my experience, the Ag Development Boards use of funds is consistent with the Board investment philosophy.”*

Response	Borrowers (N=20)	Lenders (N=10)	Total (N=30)
Strongly Agree	50%	50%	50%
Agree	35%	50%	39%
Disagree	10%	0%	7%
Strongly Disagree	5%	0%	4%
N/A	0%	0%	0%
Total	100%	100%	100%

B. Unlike the situation in the Non-Model Investments evaluation, all of the loan projects visited by the UK Team were completed and in use. This is likely a consequence of the loan processing requirements of the private lenders which resulted in more monitoring of borrowers than is the case with the Non-Model investments. In addition, 80% of borrowers and 100% of lenders indicated that the borrower received enough KAFC money to successfully complete the project. In the Non-Model evaluation, 85% of all recipients indicated they received enough ADB money to complete their project.

Table 46: *Responses to: “The ADF investments have benefited Kentucky.”*

Response	Borrowers (N=20)	Lenders (N=10)	Total (N=30)
Strongly Agree	60%	88%	68%
Agree	40%	12%	32%
Disagree	0%	0%	0%
Strongly Disagree	0%	0%	0%
N/A	0%	0%	0%
Total	100%	100%	100%

Table 47: *Responses to: “The ADF investments have been an effective use of tobacco settlement (MSA) funds.”*

Response	Borrowers (N=20)	Lenders (N=10)	Total (N=30)
Strongly Agree	65%	75%	68%
Agree	35%	25%	32%
Disagree	0%	0%	0%
Strongly Disagree	0%	0%	0%
N/A	0%	0%	0%
Total	100%	100%	100%

Table 48: *Responses to: “Have you (or has the borrower) accomplished the purpose of your (their) KAFC loan?”*

Response	Borrowers (N=20)	Lenders (N=10)	Total (N=30)
Yes	100%	100%	100%
No	0%	0%	0%
Total	100%	100%	100%

C. Half of the borrowers in the sample have received some other form of ADF assistance. This was generally cost-sharing funds from the County Model Program or Non-Model grants or forgivable loans. However, there was no indication of any coordination between the KAFC lending and the other sources of ADF funding on any of the loans included in the sample.

Table 49: *Responses to: “We received enough K AFC money to successfully implement this project.*

Response	Borrowers (N=20)	Lenders (N=10)	Total (N=30)
Strongly Agree	30%	50%	36%
Agree	50%	50%	50%
Disagree	20%	0%	14%
Strongly Disagree	0%	0%	0%
N/A	0%	0%	0%
Total	100%	100%	100%

Table 50: *Responses to: “Have you applied for any ADF grant or loan funds?”*

Response	Borrowers (N=20)
Yes	50%
No	50%
Total	100%

D. There was substantial leverage on all K AFC loans, primarily due to the loan terms and conditions. All the lenders interviewed either “strongly agreed” or “agreed” to the question about K AFC money helping borrowers leverage other funds for the project.

Table 51: *Responses to: “The K AFC money helped me (or the borrower) leverage other funds for this project.”*

Response	Borrowers (N=20)	Lenders (N=10)	Total (N=30)
Strongly Agree	45%	50%	46%
Agree	45%	50%	46%
Disagree	10%	0%	8%
Strongly Disagree	0%	0%	0%
N/A	0%	0%	0%
Total	100%	100%	100%

E. Given the eligibility conditions for AILP loans which grant a lower interest rate to those with a history of tobacco production, it was not surprising that 75% of all KAFC borrowers said that their loan helped tobacco farmers, and 86% state that they have helped tobacco-impacted communities, as well.

Table 52: *Percent of yes responses to: “Has this project helped tobacco farmers, and tobacco impacted communities?”*

Response	Borrowers (N=20)	Lenders (N=10)	Total (N=30)
Tobacco farmers	70%	88%	75%
Tobacco impacted communities	80%	100%	86%

F. Most of the borrowers (86%) say their project will have a long term impact on their business. This is predictable since most of the loans involved structures, equipment, or land purchases.

Table 53: *Responses to : “How far into the future do you see the benefits of this project reaching.”*

Response	Borrowers (N=20)	Lenders (N=10)	Total (N=30)
Short term	0%	0%	0%
Intermediate	15%	12%	14%
Long term	85%	88%	86%
N/A	0%	0%	0%
Total	100%	100%	100%

Analysis of Impacts of KAFC Loans

KAFC Program Awareness—Despite the educational efforts of the KAFC staff to publicize the availability and conditions for loan programs, about 75% of the borrowers were made aware of the KAFC loan alternatives through their lender or through direct contacts from KAFC staff. The remaining 25% of borrowers learned about KAFC through commodity associations, the media, or a family member/neighbor.

KAFC Loan Process—When asked about the KAFC loan process (i.e., interaction with staff, application, Board meetings, decision making) both the borrowers and lenders were generally very positive in their comments. The application process was viewed as open and “easy” by most borrowers. A very few borrowers, particularly in the BFLP, indicated the application process was difficult, “requiring too many hoops to jump through.” During the interviews, Bill McCloskey was singled out for several positive comments, as well as other staff at KAFC.

Several lenders indicated a concern with the “slow” decision making process, where most loan applications need approval by the full Board. Since most lenders have weekly management meetings for loan processing decisions, the relatively infrequent KAFC Board meetings appear “slow” to lenders.

Loan Portfolio—The following table shows the amount of KAFC loans made in each of the four KAFC loan programs. As of May 2008, KAFC has made 218 loans for a total of \$23.2 million dollars. The majority of loans (81%) have been made through AILP, which primarily has loaned money to build barns and grain bins. The next largest loan numbers were with the BFLP loans (17%) of which about half of the borrowers purchased land and the other half built barns, purchased equipment, or acquired livestock. Only four loans have been made through the APLP, however these were for large amounts which encumbered \$9.2 million, or 40% of total KAFC loan funds. Only one loan has been made through the CVALP for a fairly large amount which encumbered 4% of the total KAFC loan funds.

Table 54: *Kentucky Agricultural Finance Corporation loan statistics as of May 2008.*

	Num- ber of Loans	Total Amount (millions)	Per- cent of Loans	Percent of Total KAFC Funds	Total Project Cost (millions)	KAFC Percent of Total Project Cost
Ag Infrastructure Loans	177	\$10.14	81%	44%	\$31.24	32%
Beginning Farmer Loan Program	36	\$2.89	17%	12%	\$11.40	25%
Ag Processing Loans	4	\$9.20	2%	40%	\$31.76	29%
Coordinated Value-added Infrastructure Loans	1	–	0%	4%	–	25%
KAFC Total	218	\$23.19	100%	100%	\$78.26	30%

There has been a substantial amount of leveraging for KAFC loan funds. Averaging over all four KAFC loan programs, KAFC has loaned 28% of the total project costs, a 3:1 leverage ratio.

Impacts by Loan Program—The estimated impacts of the four main KAFC loan programs, based on the loan file data for the representative sample of loans, information secured in the interviews, the site visits, and the Expert Group meeting, are summarized below:

(a) Agricultural Infrastructure Loan Program (AILP)—The AILP has had the most loan activity. All of the borrowers interviewed cited the lower interest rates as the primary reason they pursued a loan with KAFC. Many new tobacco barns have been built in Western Kentucky to allow increased tobacco production in that part of the state. Grain bins, dairy barns, poultry barns, hay storage and farm shops have been built with the loans, as well. The impacts of these investments would include both enterprise expansion and improved prices from the sales of quality products due to better storage or more timely marketing.

When borrowers were asked: “Would this loan have happened without the KAFC loan program?,” 86% of the AILP borrowers replied in the affirmative. If this is the general situation

Table 55: *Kentucky Agricultural Finance Corporation Loans through May 2008.*

Barns	149	Processing	4
Grain bins	30	Farm Shop Bldgs	3
Farm Land	19	Livestock	3
Equipment	4	Operating Loans	1
Total Number of Loans	218		
Ag Infrastructure Loans	177	Ag Processing Loans	4
Tobacco	73	Timber	2
Grain	31	Bio-fuel	1
Dairy	18	Pharmaceuticals	1
Poultry	16		
Beef	10	Coordinated Value-added Infrastructure Loans	1
Swine	9	Operating Funds	1
Equine	8		
Forage / Hay	5	Beginning Farmer Loan Program	36
Other	5	Land	19
Vegetable	2	Barns	10
		Farm Shop Building	4
		Livestock	3

with the AILP loans, then this is a point of troubling concern. If the project would have been completed without the KAFC financing, then the actual impact of the KAFC loan is limited to the reduced interest rate (interest subsidy). Some of the borrowers stated they would not have done the project as soon as they did or maybe not as large without the lower KAFC interest rates. This indicates that low-interest financing is encouraging technology adoption and expansion of production. However, if 86% of the AILP borrowers can obtain financing elsewhere, KAFC is essentially duplicating conventionally available agricultural credit.

The access to capital issue in ADB Priority #2, “financing for products and businesses where there is limited financial history,” was examined by looking at the net worth of borrowers in the AILP. In the representative sample, the average net worth for AILP borrowers was \$2.8 million (Table 56). One borrower with very high net worth (\$12.4 million) skews the average upwards, so removing this borrower and recalculating results in average net worth of \$1.7 million. This is considerably higher than the net worth of the average UK Kentucky Farm Business Management Program (KFBM) participants (\$1.4m) and twice the estimated net worth of “family farms” in the U.S. (\$900,000). KFBM farmers are considered some of the most progressive and better managers in the state due to their commitment to recordkeeping and on-going financial analysis. If the ADB passed funds to the KAFC “for products and businesses where there is limited financial history,” then the AILP loan portfolio does not reflect pursuit of the original intention of the ADB for the KAFC funding.

(b) Beginning Farmer Loan Program—The KAFC completed 36 BFLP loans of May 2008 for a total of \$2.9 million or 12% of the total loan funds. Five beginning farmers who received loans were interviewed, as well as several lenders who have had multiple experiences with the program.

Table 56: *Net worth comparison: KAFC vs KFBM vs US family farm average.*

Project Type, Description	KAFC Amount	Project Cost	Net Worth Listed on Application
Agricultural Infrastructure Loan Program			
Beef:Barn	\$20,000	\$37,666	\$235,861
Dairy:Barn	\$100,000	\$758,249	\$12,431,905
Equine:Renovations	\$50,000	\$113,841	\$1,198,000
Forage:Barn	\$21,500	\$43,000	\$1,112,241
Grain:Bin	\$44,000	\$88,000	\$6,927,012
Other:Barn	\$98,000	\$149,427	\$4,447,096
Poultry:Barns	\$100,000	\$353,800	\$976,001
Swine:Barns	\$100,000	\$848,981	\$463,886
Tobacco:Barn	\$18,250	\$36,500	\$466,860
Tobacco:Barns	\$61,377	\$125,506	\$828,076
Grain:Bin	\$35,000	\$59,176	\$1,180,290
Average Net Worth per Loan			\$2,751,566
Beginning Farmers Loan Program			
Dairy:Tractor	\$12,597	\$25,195	\$132,889
Equine:Purchase Farm	\$100,000	\$254,300	\$254,300
Grain:Farmland	\$37,500	\$150,000	\$25,491
Horticulture:Equipment	\$100,000	\$200,000	\$217,639
Diversified:Farmland	\$100,000	\$246,632	\$37,900
Average Net Worth per Loan			\$133,644
Agricultural Processing Loan Program			
Timber:Equipment	\$550,000	\$1,250,000	\$4,108,068
Plants:Processing	\$3,600,000	\$8,400,000	\$188,049
Timber:Processing	\$53,000	\$106,000	\$2,314,900
Average Net Worth per Loan			\$2,203,672
Since only one Coordinated Value-added Assistance loan was awarded, statistics are not reported for privacy reasons.			
Other Measures of Net Worth			
Average Net Worth per Farm Type ^a			
	All KY Farms		\$1,337,098
	Grain.....		\$1,515,202
	Hog.....		\$892,000
	Dairy.....		\$1,140,234
	Beef.....		\$860,000
USDA ERS "Family Farm" Average Net Worth			
	"Family Farms"		\$860,000

^a 2007 KY Farm Business Management Program.

Any "beginning farmer" financing program addresses two serious issues in modern farming: high initial capital requirements and intergenerational transfer issues. The high costs for land and equipment acquisition by new farmers is a major barrier to entry for younger, thinly capitalized, entrepreneurs. The KAFC Beginning Farmer Loan Program directly addresses this issue by providing long-term, low-interest financing at start-up (i.e., borrowing the down payment for land purchase). In addition, there is often a substantial cost for intergenerational transfer of farm ownership from

older family members to younger members. This is a critical issue in Kentucky since the average age of U.S. farm operators is over 55 years of age. A BFLP loan can directly assist in ownership transfer of farms to younger family members, thus keeping management and control within the family and contributing to community stability.

Four out of five borrowers and all of the lenders interviewed stated that the BFLP loans would not have happened without the KAFC participation. In the case of land purchases, beginning farmers were able to borrow the down payment funds from KAFC. This lowered the risk for the participating lender as KAFC would take a second position behind the participating lender on the mortgage. Without land ownership it is difficult for beginning farmers to have collateral for a land purchase. Lacking collateral, a large cash down payment would be required. All of the beginning farmers said it would have been difficult to come up with the down payment money without the KAFC loan.

Because the BFLP has requirements for maximum net worth (\$500,000), maximum income (\$100,000), and experience (<10 years), it would be expected that borrowers would have modest net worth. In the representative sample, the average net worth of the Beginning Farmer loans was \$133,644. This is modest capitalization for a new agricultural entrepreneur and certainly in keeping with spirit of Priority #2 of the ADB.

The impacts on farm income from the BFLP are difficult to measure because these are mostly loans to purchase land; in which case, the future income would be a projection of anticipated results. However, it can be said that all of the BFLP loans have resulted in assisting a younger farmer to develop a new farm business in an industry with substantial barriers to entry. It is predicted that the largest turnover of assets in the history of this country will be taking place in the next two decades as the post-World War II generation inherits the older generations assets. With the average age of Kentuckys farmers at 55 years old, there is a need for younger people to continue operating farms and utilizing farm land and other fixed assets.

(c) Agricultural Processing Loan Program —There were four APLP loans made as of May 2008. Two of the loans were for wood processing firms, one was for plant-based pharmaceutical production, and one was for new bio-diesel fuel processing.

The APLP financing accounts for only 2% (4 of 218) all KAFC loans. However, these loans are large, relative to the AILP and BFLP, and account for 40% of the total KAFC portfolio. Thus, three of the four loans were included in the representative sample of APLP loans included in this evaluation. (The fourth APLP loans was the bio-diesel plant which was previously interviewed in the Non-Model Project evaluation.)

The average net worth for the APLP borrowers was \$2.2 million. Since these are existing processing firms, the amount of net worth should be considered in light of the goal of working with firms having “limited financial history.” However, in all four cases the APLP borrowers stated they could have borrowed the money elsewhere. The plant-based pharmaceutical manufacturer indicated they had a very short time line to act on their purchase of an existing facility under bankruptcy proceeding. The assistance of the KAFC staff was instrumental to their being able to act quickly to acquire the property. Like the other three borrowers, they could have borrowed the funds elsewhere. However they believe the control of the company probably would have gone to an out-of-state firm.

All of the businesses are adding value to Kentucky agriculture products. In addition, the four APLP borrowers have added twenty-eight full-time employees as a result of their expanded operations. However, actual impacts are difficult to assess because these projects could have been financed elsewhere, and two of the projects were still under construction or not yet in full production at the time of the site visits. At some point in time, impacts of these four projects (setting aside concern about alternative financing) could be estimated in terms of additional income generated by multiplying the total annual revenue from the new operations times the percentage of financing provided by the KAFC. In the case of Dickerson Lumber, there is potential for additional income generated and job creation. However, at the time of the interview, the owner-operator said the current market situation in lumber made it impossible to say net income had increased.

It seems clear that the APLP loans have the potential to contribute positively to the ADB goals of adding value to Kentucky products, exploring new opportunities for farm products, adding jobs, and affecting tobacco-impacted communities. However, it is not possible to make conclusive statements at this point.

(d) Coordinated Value-added Assistance Loan Program—The CVALP provides loans to companies and individuals who create contract production opportunities for other agricultural producers.

KAFC has completed only one CVALP at the time of the evaluation. This is a fairly large loan made in conjunction with a participating lender. The purpose of the loan is operating capital. The current loan is providing contract opportunities for other farms who are working with the borrowers. Therefore the purposes of the loan are being met and it appears consistent with the overall goals of ADB and KAFC. Due to privacy requirements, details of the sole CVALP loan and impacts cannot be discussed here.

The purpose of this loan program is not unlike the forgivable loan concept used by the ADB to insure there is a larger impact on the agriculture community beyond the applicants individual project. In the case of forgivable loans the applicant has their loan gradually forgiven based on the amount of Kentucky agricultural products they purchase from others. In the case of CVALP loans, the borrower must be involved with coordinating (contracting) other farms to join in the value chain they are creating and is required to pay back the loan in five years or less. Although the programs have a similar purpose, the level of risk reduction is vastly different. A 100% forgivable loan is essentially a grant to the successful borrower, where as a CVALP loan is not. If risk reduction to encourage new coordinated ventures is the goal, the CVALP is not offering a lot of incentive. In addition, the stipulation that the CVALP can only fund 25% of a project severely limits the ability of KAFC to mitigate risks to encourage new ventures.

KAFC Expert Meeting

The UK Evaluation Team attempted to validate evaluation findings by convening a varied group of professionals who have direct knowledge the programs and or their impacts. The “Expert Meeting” for the KAFC portion of the evaluation included nine people, some of whom are KAFC participants (borrowers or lenders) and others who have a background in agricultural finance or related farm-oriented activities. Details on the Expert Meetings are contained in Appendix C.

From the discussion in the Expert Meeting, it seems apparent that most of the participants became aware of the KFDC loan programs either from presentations given by the staff from the GOAP at professional meetings or from board meetings of the ADB. Participants generally agreed with survey findings that farmers are learning about the programs from bankers and other agricultural lenders. Most participants agreed that it is typical that agricultural lenders approach the farmer about potential KAFC loans opportunities and not the other way around.

There was a discussion about each of the KAFC loan programs. Comments about the AILP loans generally pointed out that this program is the easiest to apply for and that the guidelines are straight forward and simple to underwrite. The lower, “blended” interest rates are a major incentive and have encouraged some people to borrow the money sooner or to build a little bigger barn. The experts did not argue with the contention that the benefits of a KAFC loan, which the borrower could have financed elsewhere, are essentially confined to the interest subsidy.

The BFLP was discussed as being very helpful in Kentucky, particularly in reducing the lender risks for this type of loan. The lenders present agreed that most, if not all, of these loans would not have happened without the KAFC participation. There was a general consensus that loaning beginning farmers their down payment money helps “make the loan” and provides some collateral for the participating lender. Concerns were expressed about the BFLP eligibility requirements. It was suggested that KAFC follow the same guidelines as the Farm Service Agency for defining “beginning farmer.” The current KAFC requirement that borrowers have at least three but less than 10 years farming experience makes ineligible the children of existing farmers who have been a part of the family operation for 10 or more years. Another suggestion was for KAFC to consider offering a “first time land purchase” program in place of the existing BFLP.

None of the participants had experience with the APLP loans or the CVALP loans.

Members of the Expert Group did offer some suggestions for new loan or financing options which the KAFC Board should consider:

- Offer operating or equipment loans for livestock operations. If KAFC is going to play a larger role in central and eastern Kentucky, then it must have loan products which directly apply to full and part-time livestock producers.
- Make the participation loan (50% of total loan) a “guaranteed” loan, backed by the KAFC. More lenders would participate if there was a loan guarantee feature. This would allow banks to market part of the loan on the secondary market and generate fee income.
- The 15-year amortization on Beginning Farmer loans is good but KAFC should consider a 20-year amortization on larger Beginning Farmer loans.
- Coordinate the GOAP grants for projects with KAFC financing so that local banks serve as partners, not competitors with the GOAP programs. It is unfair for government-sponsored enterprises to compete with for-profit local businesses.

There were additional comments made by participants in the Expert Group regarding the KAFC program:

- The KAFC loan process is easy and understandable, but they should streamline the process for loans under \$50,000. Allow lenders to qualify the borrowers for loans of \$50K or less, which would make it more attractive for them to make \$10 \$30K loans.

- Is it really necessary for the KAFC Board to meet personally with applicants? Consider a standing loan review committee which includes staff and Board members. This new loan review process should be more timely and must be beyond reproach.
- The lower “blended” interest rates are a major incentive and have encouraged some people to borrow the money sooner or to build a bigger barn. A 2-3 percentage point reduction in interest rates on a loan is not going to be the determining factor in farming operation sustainability.
- KAFC loans are mainly going to traditional agriculture businesses. What about more loans for new ventures and value-added enterprises?
- Why is the money invested in KAFC helping only 218 farmers? Is that an effective use of state funds?
- Is it risk reduction or diversification to use ADB funds to build tobacco barns?
- KAFC is not as effective as the Model and Non-Model programs because there is little risk abatement on activities designed to encourage agricultural diversification. KAFC financing should be focused on taking some of the risk out of starting new ventures.
- If one-third of the KAFC loans are not going belly up then KAFC is not reducing risk for diversified efforts and new ventures.
- KAFC has put the advertising burden on the lenders. KAFC needs to promote their programs to farmers, tell them what they have to offer.
- County Model programs are wildly successful, other programs such as the Non-Model project grants/loans and KAFC are not widely known. Its become blurred as to what is available and where ADF, KAFC, County Councils?

Conclusions and Recommendations

1. **The KAFC appears to be carefully administering the funds supplied by the Agricultural Development Board for improved capital financing in agriculture. Both borrowers and lenders are pleased with the administration of the program, the staff are considered helpful and knowledgeable, and there is good financial record-keeping, reflecting the collaboration with lenders having due diligence standards. In site visits and interviews, the Evaluation Team did not encounter any issues of concern about general program implementation.**
2. **The outreach educational efforts by KAFC staff seems to primarily focus on agricultural lenders but not farmers. The loan program options are not well-understood and recognized by the general farm population.**

Recommendation: KAFC should pursue new educational efforts directed at farmers, commodity groups, farm organizations, and agribusinesses.

3. **The current loan portfolio is primarily distributed in western Kentucky counties, reflecting the popularity of the Agricultural Infrastructure Loan Program among tobacco and grain producers. If KAFC is going to expand loan implementation to more of a balanced state-wide distribution, then loan products will have to**

appeal to livestock producers, horticulture, agri-tourism, and agribusinesses in central, northeastern, and eastern counties.

Recommendation: Focus outreach efforts towards regions where there is little current loan activity but potential for financing projects with marketing and market development potential (e.g., Agricultural Processing and Coordinated Value-Added loans).

4. The composition of the current loan portfolio appears to primarily emphasize low-risk financing of relatively high net worth borrowers. Except for the BFLP loans (17% of all loans), the majority of AILP and APLP borrowers have relatively high net worth and are “experienced” business entities, not new ventures. This raises the question of how effectively the current loan portfolio addresses the ADB goal of improved capital access to those with “limited financial history.”

Recommendation: KAFC should have a clear mission statement that identifies program goals which further the stated mission of the Agricultural Development Fund and appropriately targets loan products to fulfill the mission.

5. The Agricultural Infrastructure Loan Program is the most popular KAFC loan program (81% of loans, 44% of value) primarily because it provides low blended interest rate, preferences for tobacco producers, a convenient and transparent application process, low risk to KAFC and agricultural lenders, and it is favored by producers of traditional major crops. However, the projects funded by the AILP do not appear to accomplish the market development objective or risk reduction for entities with limited financial history. While infrastructure loans have a positive impact on the efficiency and profitability of individual producers, the overall program benefit is limited to the interest subsidy because 86% of the borrowers would have completed the projects without KAFC participation. AILP may be duplicating loans that are already readily available from private lenders.

Recommendation: If the KAFC mission involves improved capital access to entities with “limited financial history,” then the Board should consider redesigning the Agricultural Infrastructure Loan Program to better serve beginning farmers, new agricultural ventures, and agricultural diversification efforts.

6. The Beginning Farmer Loan Program directly addresses the issues of barriers to entry for new farmers and intergenerational transfer of farming operations, making it a key loan product. The current 36 BFLP loans (17% of total loans, 12% of value) appear to be appropriately targeted and are meeting the goal of improving capital access to those with limited financial history. The financial benefits are clear for borrowers and impacts should expand over time as participants continue in agriculture and more loans are implemented.

Recommendation: The BFLP should be expanded so that it represents a larger share of the total portfolio and funds more new farmers.

Recommendation: Guidelines should be changed to accommodate people who have farmed but not owned a commercial size farming operation. Loans should be targeted at knowledgeable and committed applicants pursuing a commercial farming venture, so that the KAFC loan will “bootstrap” the applicant into a first-time commercial farming venture in which they have an ownership stake. (A commercial venture could be defined as capable of producing 50% or more of the net family income.) Loans should not be based on age or employment.

7. The Agricultural Processing Loan Program is accomplishing the goal of marketing and market development. However, there are only four loans in this part of the portfolio and they represent 40% of loaned funds. All four borrowers stated they could have borrowed the money elsewhere but they liked the lower interest rates. It is questionable whether these loans are needed in the normal course of agricultural processing. The fourth APLP loan was made to an innovative plant-based pharmaceutical manufacturer. If successful this investment could result in a large amount of contract production for Kentucky farmers to raise specialty crops. Of the four APLP loans, perhaps this loan is the only one that could result in new markets and greater opportunities that would not have happened without the KAFC.

Recommendation: KAFC should revise loan program guidelines to target new and existing firms needing venture capital for the development of new, value-added Kentucky agricultural products.

8. The Coordinated Value-added Assistance Loan Program seems intended to support value chains involving multiple farms producing and selling into specific large markets. This has the potential to directly address ADF Priority #1, marketing and market development. However, only one loan has been made in the CVLP, possibly because participation is limited to 25% of the total project. A 25% participation loan may not reduce the risk enough for participating lenders to fund new proposals about innovative value-added ventures in agriculture. Because Kentucky has so many small farms, this coordinated approach has high potential to help these producers access larger markets and gear production towards specialty, niche markets such as grass-fed beef, organic produce, or specialty grains.

Recommendation: Revise the program guidelines to expand risk reduction and encourage new and innovative ventures. Seek collaboration with projects in the ADB Non-Model Program to provide a combination of loan and grant financing that could provide enough risk reduction to launch new ventures and encourage private lenders to participate.

Recommendation: K AFC should seek collaborative financing of new Coordinated Value-added Loans with ADB providing additional risk reduction through grant funding of new ventures.

The Key Questions

1. **Where would Kentucky's agriculture be without the ADB investments?**

The ADB investments have had clear, quantifiable impacts on Kentucky agriculture and agribusiness. Study findings suggest that the ADB investments have resulted in more agricultural diversification, higher levels of technology in production practices, more and expanded markets for products, more rapid adoption of technology through education and cost-share incentives, and a positive and significant increase in agricultural incomes. Conversely, without the ADB investments, Kentucky agriculture would have less diversification, lower levels of technology in production practices, fewer and smaller markets for products, less knowledge about up-to-date production techniques, and smaller incomes than currently exist.

2. **What have been the quantitative and qualitative impacts of ADB expenditures?**

For the \$86 million invested in 175 non-model projects, the estimated annual additional farm income is \$42 million for a total income impact over 2001-2007 of \$161 million. That represents \$1.87 of farm income generated per dollar of ADB investment in non-model projects. The County Model Program has produced documental improvements in on-farm productivity, especially in livestock production. The KAFC loan programs have helped finance new infrastructure and the Beginning Farmer Loan Program has assisted people with limited financial history.

Qualitative impacts of the ADB investments include more product diversification both on the farm and from processing, higher quality products, lessons learned from the wide range of projects funded, and development of a structure and funding stream for support of Kentucky agriculture.

3. **How have ADB investments leveraged other resources?**

For Non-Model projects, the participants have leveraged an additional \$96 million, or 11% more than the ADB funding for large, medium, and small projects. For the Model Program, the general cost-share is 50%, requiring leverage equal to the \$100 million of ADB investments. KAFC loan programs all require borrower participation so the leverage is normally 50%. In summary, additional funds leveraged for ADB projects have substantially exceeded the direct investment of agricultural development funds.

4. **How have ADB programs affected county leadership and entrepreneurial leadership?**

There have been a few projects that directly developed leadership skills and entrepreneurial leadership skills of individuals. In addition, the state board and county council system have provided leadership positions that people in the industry, thus fulfilling a larger leadership function for agriculture in the state.

Appendices

AN EVALUATION OF THE AGRICULTURAL DEVELOPMENT
BOARD INVESTMENTS IN KENTUCKY AGRICULTURE,
2001-2007: NON-MODEL PROJECTS, MODEL PROGRAMS,
AND THE KENTUCKY AGRICULTURAL FINANCE
CORPORATION

Appendix A

Survey forms and results tables

Non-model projects survey form

15



ADF Evaluation Survey

I). Background Information

1) Nature of the business

2) Brief summary of company or project's history (including start date)

3) Purpose, amount and goals of ADF award

4) How has the award been used and what changes (if any) occurred in the proposed plan you submitted to the ADB?

II). Qualitative Information

The ADB has the following investment philosophy:

"The KY ADB will invest monies from the KY Ag Development Fund in innovative proposals that increase net farm income and effect tobacco farmers, tobacco-impacted communities, and agriculture across the state through stimulating markets for KY agriculture products, finding new ways to add value to KY agriculture products, and exploring new opportunities for KY farms and farm products."

1) Based on my experience, the Ag Development Board's use of funds is consistent with this philosophy.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain

1

2) The ADB has six major priorities or goals. Which of these is the main priority or goal that your project contributes to? (check one)

- Marketing and market development
- Improving access to capital
- Financial incentives for environmental stewardship
- Farm family education and computer literacy
- Supporting local leadership
- Research and development

Explain _____

3) Are there other priorities or goals your project also contributes to? (check all that apply)

- Marketing and market development
- Improving access to capital
- Financial incentives for environmental stewardship
- Farm family education and computer literacy
- Supporting local leadership
- Research and development

Explain _____

III). Quantitative Information

1) The evaluation team is assessing outcomes and impacts of the ADF investments. Below is a list of potential impacts. Please identify which ones apply to your organization and explain the nature/extent of that impact. Include numerical measures when possible.

- a) Created a new market for KY agriculture products Yes ___ No ___
- b) Helped our organization make loans or grants to farmers Yes ___ No ___
- c) Provided incentives for environmental stewardship Yes ___ No ___
- d) Provided support for agricultural entrepreneurship Yes ___ No ___
- e) Increased farmer computer literacy Yes ___ No ___
- f) Supported local leadership development Yes ___ No ___
- g) Conducted new ag research and development Yes ___ No ___
- h) Increased farm income for KY farmers Yes ___ No ___
Estimate \$ & explain how figured:
- i) Developed new products Yes ___ No ___
- j) Added value to KY agriculture products Yes ___ No ___
- k) Expanded an existing market for KY ag products Yes ___ No ___
- l) Developed a new agriculture related business Yes ___ No ___
- m) Enhance an existing farm enterprise Yes ___ No ___
- n) Created new jobs in the local economy Yes ___ No ___
- o) Enhanced the viability of young farmers Yes ___ No ___
- p) Enhanced the viability of part-time farmers Yes ___ No ___

Explain _____

2) Do you have written documentation of results that you could share with the evaluation team? If yes, what documents? _____

3) Have you met some or all of your goals and objectives outlined in your ADF proposal? ___ Yes ___ No

- All
- Some
- None

Explain? _____

4) Approximately what percentage of the total ADF money was spent on:

- Personnel costs _____
- Operating costs _____
- Equipment costs _____
- Construction costs _____

4) Has this project helped:

- a. Tobacco farmers? ___ Yes ___ No How many farmers? _____
- b. Tobacco-impacted communities? ___ Yes ___ No How many communities? _____

5) How many farm youth are affected by this project?

- N/A
- 0
- 1-10
- 11-25
- 26-50
- 51-100
- More _____ How many?

Explain how the farm youth were affected?

IV). Opinions

1) Did you receive any outside assistance when preparing your ADF proposal?
__Yes __No

1A) Did you receive any outside assistance during the initial implementation of your project? __Yes __No

Financial Planning. __Yes __No __Does not apply
If you needed help, who did you contact _____

Marketing. __Yes __No __Does not apply
If you needed help, who did you contact _____

Crop or Livestock Production. __Yes __No __Does not apply
If you needed help, who did you contact _____

Processing. __Yes __No __Does not apply
If you needed help, who did you contact _____

Product Development __Yes __No __Does not apply
If you needed help, who did you contact _____

Leadership Development __Yes __No __Does not apply
If you needed help, who did you contact _____

Other needs, specify __Yes __No _____

1A) If you answered yes to any of the above questions, was the help enough?
Area of need _____ Enough? __Yes __No _____

Explain what you needed

For the following questions, do you Strongly Agree, Agree, Disagree, or Strongly Disagree?

2) The ADF money was a critical component to starting this project.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain _____

3) My business or project will be able to continue after the ADF money has ended.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain _____

4) How far into the future do you see the benefits of this project reaching?

- Short Term (1-4 Years)
- Intermediate (5-10 Years)
- Long term (over 10 Years)

How? _____

5) The ADF money helped me leverage other funds for this project.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain _____

6) The forgivable loan concept (if applicable) has worked well for our organization.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain _____

7) The ADF investments have benefited Kentucky.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain _____

8) The ADF investments have been an effective use of tobacco settlement (MSA) funds.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain _____

9) We received enough ADF money to successfully implement this project.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain _____

10) How well did you estimate the funds needed for this project?

- Overestimated
- Underestimated
- About right

Explain _____

11) Are you aware of the Kentucky Agriculture Finance Corporation? Yes ___ No ___

11A) If so, what has been your experience with the KAFC?

12) As far as this project is concerned, is there anything that went wrong or didn't work out as you originally planned?

Explain _____

V). Is there anything else you would like to share with the Evaluation Team about the impacts and consequences of the ADF investments?

KAFC borrower survey form

KAFC-B3



KAFC Evaluation Survey – Borrower

I). Background Information

1) Nature of the business

2) Purpose and amount of KAFC loan

II). Qualitative Information

1) Which KAFC program did you participate in?

Agricultural Infrastructure Loan Program

Agricultural Processing Loan Program

Coordinated Value-Added Assistance Loan Program

Beginning Farmer Loan Program

2) Why did you decide to use the KAFC loan program?

3) Would this loan have happened without the KAFC loan program?

4) Did you work with a different lender than you normally would have for this loan?

5) Other than a lower interest rate, has the KAFC loan program provided anything that you normally couldn't get using your regular agricultural lender?

Please explain:

1

6) Have you accomplished the purpose of your KAFC loan? Yes ____ No ____

Explain? _____

7) What went wrong or didn't work out as you originally planned?
Explain _____

8) In a sentence or two please tell us your opinion of the following KAFC loan programs:

Beginning Farmer Loan Program

Agricultural Infrastructure Loan Program

Agricultural Processor Loan Program

Value-added Assistance Loan Program

9) What are the good and bad aspects of the KAFC loan program?

10) Do you have any suggestions on how to improve the KAFC financing?

III). Quantitative Information

1) The evaluation team is assessing outcomes and impacts of the KAFC investments. Below is a list of potential impacts. Please identify which ones apply to your organization and explain the nature/extent of that impact. Include numerical measures when possible.

This loan:

- a) Created a new market for KY agriculture products Yes ___ No ___
- b) Provided support for agricultural entrepreneurship Yes ___ No ___
- c) Increased your net income Yes ___ No ___
Estimate:
- d) Developed new products Yes ___ No ___
- e) Added value to KY agriculture products Yes ___ No ___
- f) Expanded an existing market for KY ag products Yes ___ No ___
- g) Developed a new agriculture related business Yes ___ No ___
- h) Enhance an existing farm enterprise Yes ___ No ___
- i) Created new jobs in the local economy Yes ___ No ___
- j) Enhanced the viability of young farmers Yes ___ No ___
- k) Enhanced the viability of part-time farmers Yes ___ No ___

Explain _____

2) Has this project helped:

- a. Tobacco farmers? ___Yes ___No How many farmers? _____
- b. Tobacco-impacted communities? ___Yes ___No How many communities? _____

IV). Opinions

Questions Concerning the Kentucky Agricultural Finance Corporation:

For the following questions, do you Strongly Agree, Agree, Disagree, or Strongly Disagree?

1) The KAFC money was a critical component to starting this project.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain _____

2) How far into the future do you see the benefits of this project reaching?

- Short Term (1-4 Years)
- Intermediate (5-10 Years)
- Long term (over 10 Years)

How? _____

3) The KAFC money helped me leverage other funds for this project.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain _____

4) We received enough KAFC money to successfully implement this project.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain _____

Questions Concerning the Agricultural Development Fund as a Whole:

5) Have you applied for any ADF grant or loan funds? Yes ____ No ____

6) Have you received any ADF grant funds? Yes ____ No ____

If yes, describe:

State ADF \$ _____

County ADF \$ _____

7) Have you received an ADF forgivable loan? Yes _____ No _____
If yes, describe:

For the following questions, do you Strongly Agree, Agree, Disagree, or Strongly Disagree?

The ADB has the following investment philosophy:

“The KY ADB will invest monies from the KY Ag Development Fund in innovative proposals that increase net farm income and effect tobacco farmers, tobacco-impacted communities, and agriculture across the state through stimulating markets for KY agriculture products, finding new ways to add value to KY agriculture products, and exploring new opportunities for KY farms and farm products.”

8) Based on my experience, the Ag Development Board’s use of funds is consistent with this philosophy.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain _____

9) The ADF investments have benefited Kentucky.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain _____

10) The ADF investments have been an effective use of tobacco settlement (MSA) funds.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain _____

V). Is there anything else you would like to share with the Evaluation Team about the impacts and consequences of the ADF investments including the Kentucky Agricultural Finance Corporation?

KAFC lender survey form

KAFC-L3



KAFC Evaluation Survey – Lender

I). Background Information

1) Nature of the business

2) Purpose and amount of KAFC loan

II). Qualitative Information

1) How many loans have you made in participation with KAFC?

- Agricultural Infrastructure Loan Program
- Agricultural Processing Loan Program
- Coordinated Value-Added Assistance Loan Program
- Beginning Farmer Loan Program

2) When and why did you become involved in loan participation with KAFC?

3) Would this loan to _____ have happened without the Kentucky Agricultural Finance Corporation participation?

4) Would any of the other loans you have made with the KAFC have happened without the participation of the KAFC?

5) Do the KAFC loan programs allow you to work with new or different clientele than you normally would?

6) How would you describe the loan process for KAFC loans?

- Very Easy
- Somewhat Easy
- Somewhat Difficult
- Very Difficult

7) In a sentence or two please tell us your opinion of the following KAFC loan programs:

- Beginning Farmer Loan Program

- Agricultural Infrastructure Loan Program

- Agricultural Processor Loan Program

- Value-added Assistance Loan Program

8) Has the borrower accomplished the purpose of the KAFC loan? Yes _____ No _____
Explain? _____

9) What went wrong or didn't work out as originally planned?
Explain _____

10) Based on your experience, what are the positive and negative aspects of the KAFC loan programs?

11) Do you have any suggestions on how to improve the KAFC financing?

III). Quantitative Information

1) The evaluation team is assessing outcomes and impacts of the K AFC investments. Below is a list of potential impacts. Please identify which ones apply to this loan and explain the nature/extent of that impact. Include numerical measures when possible.

This loan:

- a) Created a new market for KY agriculture products Yes ___ No ___
- b) Provided support for agricultural entrepreneurship Yes ___ No ___
- c) Increased the borrowers net income Yes ___ No ___
Estimate:
- d) Developed new products Yes ___ No ___
- e) Added value to KY agriculture products Yes ___ No ___
- f) Expanded an existing market for KY ag products Yes ___ No ___
- g) Developed a new agriculture related business Yes ___ No ___
- h) Enhance an existing farm enterprise Yes ___ No ___
- i) Created new jobs in the local economy Yes ___ No ___
- j) Enhanced the viability of young farmers Yes ___ No ___
- k) Enhanced the viability of part-time farmers Yes ___ No ___

Explain _____

2) Has this project helped:

- a. Tobacco farmers? ___Yes ___No How many farmers? _____
- b. Tobacco-impacted communities? ___Yes ___No How many communities? _____

IV). Opinions

Questions Concerning the Kentucky Agricultural Finance Corporation:

For the following questions, do you Strongly Agree, Agree, Disagree, or Strongly Disagree?

1) The K AFC money was a critical component to starting this project.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain _____

2) How far into the future do you see the benefits of this project reaching?

- Short Term (1-4 Years)
- Intermediate (5-10 Years)
- Long term (over 10 Years)

How? _____

3) The K AFC money helped the borrower leverage other funds for this project.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain _____

4) The borrower received enough K AFC money to successfully implement this project.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain _____

Questions Concerning the Agricultural Development Fund as a Whole:

For the following questions, do you Strongly Agree, Agree, Disagree, or Strongly Disagree?

The ADB has the following investment philosophy:

“The KY ADB will invest monies from the KY Ag Development Fund in innovative proposals that increase net farm income and effect tobacco farmers, tobacco-impacted communities, and agriculture across the state through stimulating markets for KY agriculture products, finding new ways to add value to KY agriculture products, and exploring new opportunities for KY farms and farm products.”

5) Based on my experience, the Ag Development Board’s use of funds is consistent with this philosophy.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain _____

6) The ADF investments have benefited Kentucky.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain _____

7) The ADF investments have been an effective use of tobacco settlement (MSA) funds.

- Strongly Agree
- Agree
- Disagree
- Strongly Disagree

Explain _____

V). Is there anything else you would like to share with the Evaluation Team about the impacts and consequences of the ADF investments including the Kentucky Agricultural Finance Corporation?

Survey tables

Non-model survey tables

Table A.1: *Responses to: “Based on my experience, the Ag Development Boards use of funds is consistent with the Board investment philosophy.”*

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Strongly Agree	81%	82%	48%	72%
Agree	13%	12%	40%	20%
Disagree	3%	3%	12%	6%
Strongly Disagree	3%	0%	0%	1%
N/A	0%	3%	0%	1%
Total	100%	100%	100%	100%

Table A.2: *Responses to: “The ADB has six major priorities or goals. Which of these is the main priority or goal that your project contributes to?”*

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Marketing and market development	77%	61%	92%	75%
Improving access to capital	7%	12%	4%	9%
Financial incentives for environmental stewardship	0%	3%	0%	1%
Farm family education and computer literacy	10%	9%	4%	8%
Supporting local leadership	3%	3%	0%	2%
Research and development	3%	9%	0%	4%
N/A	0%	3%	0%	1%
Total	100%	100%	100%	100%

Table A.3: *Responses to: “Please identify which outcomes and impacts apply to your organization.”*

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Increased net farm income for local farmers	97%	85%	100%	93%
Provided support for agricultural entrepreneurship	90%	82%	76%	83%
Added value to KY agriculture products	94%	67%	88%	82%
Enhanced an existing farm enterprise	84%	79%	84%	82%
Enhanced the viability of part-time farmers	81%	82%	80%	81%
Expanded an existing market for KY ag products	84%	67%	84%	78%
Created a new market for KY agriculture products	74%	64%	84%	73%
Created new jobs in the local economy	84%	70%	64%	73%
Enhanced the viability of young farmers	74%	76%	60%	71%
Developed a new agriculture related business	71%	64%	68%	67%
Developed new products	77%	48%	48%	58%
Supported local leadership development	61%	52%	52%	55%
Conducted new ag research and development	71%	58%	24%	53%
Made loans or grants to farmers	45%	12%	4%	21%
Increased farmer computer literacy	35%	12%	8%	19%

Table A.4: *Responses to: “Have you met some or all of your goals and objectives outlined in your ADF proposal?”*

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Yes	97%	97%	100%	98%
No	3%	3%	0%	2%
Total	100%	100%	100%	100%
All	48%	33%	72%	50%
Some	48%	64%	28%	48%
None	4%	3%	0%	2%
Total	100%	100%	100%	100%

Table A.5: *Percent of yes responses to: “Has this project helped tobacco farmers, and tobacco impacted communities?”*

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Tobacco farmers	100%	94%	100%	98%
Tobacco impacted communities	100%	94%	100%	98%

Table A.6: *Responses to: “How many farm youth are affected by this project?”*

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
0	0%	9%	0%	3%
1 to 10	3%	24%	36%	20%
11 to 25	14%	7%	24%	14%
26 to 50	3%	9%	4%	6%
51 to 100	10%	6%	8%	8%
More	35%	15%	12%	21%
N/A	35%	30%	16%	28%
Total	100%	100%	100%	100%

Table A.7: *Responses to: “What type of outside assistance did you receive during the initial implementation of your project?”*

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Preparing proposal	32%	55%	48%	45%
Initial implementation	35%	52%	24%	38%
Financial planning	45%	18%	12%	26%
Marketing	32%	42%	12%	30%
Crop or livestock production	35%	27%	20%	28%
Processing	29%	21%	24%	25%
Product development	26%	15%	8%	17%
Leadership development	42%	3%	12%	19%
Other	26%	12%	16%	18%

Table A.8: Responses to: “The ADF money was a critical component to starting this project.”

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Strongly Agree	81%	79%	64%	75%
Agree	13%	18%	16%	16%
Disagree	3%	3%	12%	6%
Strongly Disagree	3%	0%	8%	3%
N/A	0%	0%	0%	0%
Total	100%	100%	100%	100%

Table A.9: Responses to: “My business or project will be able to continue after the ADF money has ended.”

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Strongly Agree	69%	64%	60%	65%
Agree	16%	24%	28%	22%
Disagree	6%	9%	4%	7%
Strongly Disagree	6%	3%	4%	4%
N/A	3%	0%	4%	2%
Total	100%	100%	100%	100%

Table A.10: Responses to: “The ADF investments have benefited Kentucky.”

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Strongly Agree	81%	82%	72%	79%
Agree	19%	12%	28%	19%
Disagree	0%	0%	0%	0%
Strongly Disagree	0%	0%	0%	0%
N/A	0%	6%	0%	2%
Total	100%	100%	100%	100%

Table A.11: *Responses to: “The ADF investments have been an effective use of tobacco settlement (MSA) funds.”*

Response	Large (N=31)	Medium (N=33)	Small (N=25)	Total (N=89)
Strongly Agree	65%	70%	60%	65%
Agree	35%	24%	36%	32%
Disagree	0%	0%	4%	1%
Strongly Disagree	0%	0%	0%	0%
N/A	0%	6%	0%	2%
Total	100%	100%	100%	100%

KAFC survey tables

Table A.12: *Responses to: “Based on my experience, the Ag Development Boards use of funds is consistent with the Board investment philosophy.”*

Response	Borrowers (N=20)	Lenders (N=10)	Total (N=30)
Strongly Agree	50%	50%	50%
Agree	35%	50%	39%
Disagree	10%	0%	7%
Strongly Disagree	5%	0%	4%
N/A	0%	0%	0%
Total	100%	100%	100%

Table A.13: *Responses to: “The ADF investments have benefited Kentucky.”*

Response	Borrowers (N=20)	Lenders (N=10)	Total (N=30)
Strongly Agree	60%	88%	68%
Agree	40%	12%	32%
Disagree	0%	0%	0%
Strongly Disagree	0%	0%	0%
N/A	0%	0%	0%
Total	100%	100%	100%

Table A.14: *Responses to: “The ADF investments have been an effective use of tobacco settlement (MSA) funds.”*

Response	Borrowers (N=20)	Lenders (N=10)	Total (N=30)
Strongly Agree	65%	75%	68%
Agree	35%	25%	32%
Disagree	0%	0%	0%
Strongly Disagree	0%	0%	0%
N/A	0%	0%	0%
Total	100%	100%	100%

Table A.15: *Responses to: “Have you (or has the borrower) accomplished the purpose of your (their) K AFC loan?”*

Response	Borrowers (N=20)	Lenders (N=10)	Total (N=30)
Yes	100%	100%	100%
No	0%	0%	0%
Total	100%	100%	100%

Table A.16: *Responses to: “We received enough K AFC money to successfully implement this project.”*

Response	Borrowers (N=20)	Lenders (N=10)	Total (N=30)
Strongly Agree	30%	50%	36%
Agree	50%	50%	50%
Disagree	20%	0%	14%
Strongly Disagree	0%	0%	0%
N/A	0%	0%	0%
Total	100%	100%	100%

Table A.17: *Responses to: “Have you applied for any ADF grant or loan funds?”*

Response	Borrowers (N=20)
Yes	50%
No	50%
Total	100%

Table A.18: *Responses to: “The K AFC money helped me (or the borrower) leverage other funds for this project.”*

Response	Borrowers (N=20)	Lenders (N=10)	Total (N=30)
Strongly Agree	45%	50%	46%
Agree	45%	50%	46%
Disagree	10%	0%	8%
Strongly Disagree	0%	0%	0%
N/A	0%	0%	0%
Total	100%	100%	100%

Table A.19: *Percent of yes responses to: “Has this project helped tobacco farmers, and tobacco impacted communities?”*

Response	Borrowers (N=20)	Lenders (N=10)	Total (N=30)
Tobacco farmers	70%	88%	75%
Tobacco impacted communities	80%	100%	86%

Table A.20: *Responses to : “How far into the future do you see the benefits of this project reaching.”*

Response	Borrowers (N=20)	Lenders (N=10)	Total (N=30)
Short term	0%	0%	0%
Intermediate	15%	12%	14%
Long term	85%	88%	86%
N/A	0%	0%	0%
Total	100%	100%	100%

Appendix B

Project briefs

Non-model project briefs

Business: Owensboro Grain Company LLC

Project Title: Bio-Diesel Plant ADF forgivable loan - \$1,000,000 K AFC Ag Processing loan -\$5,000,000

Description: Owensboro Grain Company (OGC) is a privately owned company founded in 1906. OGC produces edible oils and soy products including soybean meal, soy hull pellets, soy oil and lecithin. Annual sales of the company are approximately \$300 million dollars. OGC purchases approximately 30 million bushels of soybeans annually of which approximately 45% are grown in Kentucky (13-14 million bu.).

Goals stated in the Terms sheet: (Evaluation Team comments in italics)

1. Build a 30 45 million gallon bio-diesel processing plant. *Accomplished. Due to open Sept. 2007*
2. Produce and sell 35-45 million gallons of bio-diesel fuel annually *Built a plant capable of producing 45 million gallons of bio-diesel annually, not operational as yet.*
3. Amortize a 10 year forgivable loan by providing \$100,000 in discounted fuel prices to KY tobacco farmers (max of \$1,000 per farmer). *OGB plans to offer rebates of \$.50 per gallon of fuel purchased by KY tobacco farmers.*
4. Potentially create an increased demand for soybeans resulting in an additional 12 cents per bushel local market price. *Plant is not operational yet.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Potentially the demand for soybeans could have lessened due to less demand for hydrogenated soy oil. However other bio-diesel plants would be interested in purchasing soy oil for conversion to bio-diesel.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Assurance of continued demand for 14 million bushel of KY soybeans. Potentially an increase of 5% in demand for soybeans to make bio-diesel fuel. A 5% increase in demand for \$6 dollar beans amounts to \$.12/bushel X 14,000,000 bu. = \$1,680,000 in additional NFI*
3. How have ADF investments leveraged other resources? *Yes, approximately 3/1 dollars leveraged. \$6 m in ADF and Ag Finance Corp funds used to build a \$19 m plant*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Business: Kentucky 4-H Foundation, formerly Friends of Kentucky 4-H, Inc.

Project Title: Youth Endowment Program ADF grant \$2,000,000.00, October 2001

Description: Friends of Kentucky 4-H, Inc., now Kentucky 4-H Foundation, was founded in 1974 to financially support the Kentucky 4-H Youth Development Program. The foundation is a private non-profit 501(c)(3) organization in partnership with the Kentucky Cooperative Extension, University of Kentucky College of Agriculture, and Kentucky State University. The foundation has a board with 25 members from all across the state that sets the by-laws and oversees the foundation.

Goals stated in the Terms sheet: (Evaluation Team comments in italics)

1. Establish the Venture Capital Endowment *accomplished*
2. Use income from the \$2M investment to fund grants through the KY 4-H program. *accomplished*

3. Funded grants will provide training and development that leads to innovative and creative enterprises that have a high probability of developing into new business/career opportunities. *accomplished*
4. Have funds serve as a resource for programming through Cooperative Extension for Kentuckys youth and their communities who are transitioning from tobacco production to other enterprises. *accomplished*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Over 9,000 Kentuckians would not have educational opportunities to help them diversify from tobacco by becoming leaders and creating new business opportunities.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Over 9,000 Kentuckians from 99 counties have been educated and/or financially supported in new business endeavors. 25 venture grant projects have been funded from between 2003 and 2006. \$481,235 total has been given to the 25 projects so far for financial assistance, this money was matched 1/1by the applicants. The Foundation now has its first executive director. Some venture grant projects support environmental stewardship and Ag entrepreneurship.*
3. How have ADF investments leveraged other resources? *Individual projects must match 50/50 in order to be approved for funding from the 4-H foundation, this resulted in approximately \$481,235 in additional funds. By having a full time executive director, the foundation was able to raise an additional \$600,000 in funds.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Educate and support youth to become future leaders in their counties and as entrepreneurs.*

Business: Aquaculture of Kentucky, Inc

Project Title: Fish hatchery, fingerling production and value-added products \$411,500 Forgivable Loan, March 2003

Description: Aquaculture of Kentucky is a privately owned fish farm, hatchery and nursery located in Farmington, KY. The founder, Dr. Robert Goetz was an owner and operator of a successful aquaculture farm in Arkansas. He sold his interest in the business and moved back to his home state of Kentucky to start a new aquaculture farm. In September of 2002 Dr. Goetz applied for ADF money.

Goals stated in the Terms sheet: (Evaluation Team comments in italics)

1. Will make available to KY fish farmers hybrid striped bass fingerlings at 50 cents each. *Done*
2. Will make available to KY fish farmers paddlefish fingerlings (12 14) at a breakeven cost of \$1.70 each. The fish will reach market sizes (5-10lbs. each) within 6-12 months. Will purchase the market size fish at a competitive price based on the following incentive plan: *Will pay \$1.00/lb (live weight) if paddlefish survival of at least 75%. Will pay \$.80/lb (live weight) if paddlefish survival is greater than or equal to 50% but less than 75%. Will pay \$.60/lb if paddlefish survival is less than 50%.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *KY aquaculture farms would have less access to valuable seed stock of specialty fish species in demand with out of state markets, i.e. paddlefish, large mouth bass, hybrid striped bass and tilapia.*
2. What have been the quantitative and qualitative impacts of ADF expenditures?
3. How have ADF investments leveraged other resources? *Yes, the ADF forgivable loan was 35 of the total project cost.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Provides opportunities to purchase and raise alternative fish species besides catfish and trout.*

Organization: Bath County Agricultural Extension Foundation, Inc.

Project Title: Agriculture Education and Marketing Center \$1,510,000 Grants in December 2002 and November 2003

Description: The Bath County Agriculture Education and Marketing Center will include a covered farmers market, a store front, certified commercial kitchen, meeting facilities, light processing unit, and extension offices. The Center will provide education and support for the sale of local commodities and value added products, independent food product development, and other educational programs. Donated land (2001) and a USDA Rural Development Grant (2002) provided the matching funds required for approval. The application to The Board was approved in 2003.

Goals stated in the Terms sheet: (Evaluation Team comments in italics)

1. Provide additional markets for area farmers produce by providing the facilities for value added processing, education and training facilities for production, processing, and marketing, a permanent facility for Farmers Market direct sales, provide facilities for product development, provide a more secure market for local producers through sales to government institutions (schools, prisons, universities), provide the necessary staff to operate each component of the project, including production, processing, and marketing.
2. Lessen the regions dependency on tobacco.
3. The goal and objective of the Bath County Agricultural Extension Foundation, Inc. is to provide the legal funding body to meet the needs of the Bath County Extension District Board in their efforts to provide improved funding and facilities for the operation of the Bath County Extension Service.

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *One of Kentucky's most tobacco dependent regions would be lacking new farmer's market facilities.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Examples were provided for 13 of 16 possible impacts. Estimated that half of the growers selling at the farmers market or the produce auction are part time. The project has affected 51-100 farm youth. Sewer lines have been provided to 104 homes and businesses as a result of this project. Produce auction sales for 2005 = \$20,000, 2006 = 24,260 and 2007 = \$29,663. Total produce auction sales for the three year period = \$73,923.*
3. How have ADF investments leveraged other resources? *Rural development grant and land donation were used to match ADF money.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *This project supported local leadership through the egg coop executive officer committee and the produce auction board. Entrepreneurial leadership has been supported by opportunities provided to market products.*

Organization: Boones Abattoir, Inc.

Project Title: Livestock Slaughter and Processing Facility

Award: ADF forgivable loan \$572,676, June 2004

Description: Boones Abattoir Inc. is a family owned business that has been in operation for 55 years. They process cattle, hogs, lamb, goats and buffalo in a USDA inspected facility. They process for local farmers as well as operating a retail store for walk in meat customers. While in the process of applying for ADF money to expand their operations, the facility was severely damaged in a fire (April 1, 2004). At that time there was only two other USDA inspected meat processing facilities available for farmers to use in Central KY. The loss of Boones processing capacity would have reduced the USDA inspected beef processing capacity in Central Kentucky by 40%. (From 100 head / week down to 60 head/week). Boones was awarded a forgivable loan in the amount of \$572,676 over 20 years at zero percent interest and amortized at \$28,634 per year.

Goals stated in the Terms sheet: (Evaluation Team comments in italics)

1. Allow for the continuation of USDA inspected custom meat slaughter for KY farmers who market direct to consumers. *Facility has been built back new and larger*
2. Provide new and expanded services to farmer/direct marketer customers. *Additional cold storage added to allow aging of beef for customers.*
3. Create new value-added products for the farmer/direct marketer customers. *New equipment added to make value-added products: brats, hot dogs, jerky, bacon, sausage patties, and smoked products.*
4. Expand the service area up to 80 miles from the plant 15 counties mentioned in the interview. Expand the weekly kill rate from 23 head of cattle and 150 head of hogs per week. Mr. Boone estimated they currently kill and process 30 beef, 30-40 hogs and 3-4 goats or lamb per week on average, more at peak times. Provide a 5% discount on services to KY producers who direct market. *Accomplished*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *There would be less processing capacity for farm direct marketers to get their animal processed under USDA inspection, which is a requirement in order to sell processed meat wholesale or retail.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *\$370,000 estimated in annual net farm income. An additional 40 head of cattle processing capacity per week, plus hogs, lambs and goats. 40 farms selling value-added (USDA inspected) meat.*
3. How have ADF investments leveraged other resources? *An additional \$732,767 of private funds went into the project.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *40 direct marketers can receive experienced advice on meat processing and marketing.*

Organization: Buffalo Trace Area Development District (BTADD)

Project Title: Agricultural Revolving Loan Fund for Buffalo Trace Area

Award: Grant \$1,000,000 November 2003

Description: BTADD serves 8 counties in Northeast Kentucky; including Bath, Bracken, Fleming, Greenup, Lewis, Mason, Robertson, and Rowan Counties (3 are in top 10 most tobacco dependent). An agriculture-related revolving loan fund was established to attract and promote diversified businesses to the region. 4 Seasons Marketing, LLC, a company that markets specialized feed, was the first recipient. Before the funds the company was marketing out-of-state products in Kentucky and had 30-40 full-time. After the loan they manufactured nutritional supplement blocks, tubs, and bags containing trace minerals. They use Kentucky agriculture products to manufacture a value added agriculture product marketed in and out of Kentucky, and have 50-60 full-time employees.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Construct, or acquire and improve, a manufacturing facility in Fleming County. Generate additional product demand while creating jobs for the local economy and utilizing Kentucky produced farm products (distillers grain from Hopkinsville and soybean meal from Lewis County). Provide multiple forms of supplementation that can include vitamins, protein, minerals, or medication depending on the producers needs and objectives. Positively impact local trucking and timber industry since all Ultralyx products are shipped on hardwood pallets (pallet manufacturers and trucking companies in area). Lower input costs for Kentucky Livestock producers due to reduced transportation costs (4 Seasons previously marketed products produced in Illinois, Georgia, Kansas, and Iowa). Transfer demand for labor to local economy. BTADD in general: Make recaptured available to relend for the benefit of new or expanding agriculture related enterprises in the Buffalo Trace region.

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Livestock production costs would be higher in Buffalo Trace area, capital for agricultural entrepreneurs and technical assistance for farmers would not be available.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Sales increased from \$6.5m to ¿\$9m, Ultralyx sales increased from \$1m to ¿\$7m. 30,000 tons of product manufactured in 2006 (31% loose mineral, 45% poured protein tubs, 24% small pressed blocks). 15-20 new jobs (fulltime?). Just in time supply program, minimal ingredient supply problems. First new loan made to Northern KY Cedar for \$75,000.*
3. How have ADF investments leveraged other resources? *\$1.5m in other funds*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *BTADD loan board members are county and regional leaders, so far 4 Seasons is an agricultural entrepreneurship success.*

Organization: Kentucky Agriculture Heritage Center

Project Title: Kentucky Agriculture Heritage Center

Award: Grant \$1,000,000—June 2006

Description: The Kentucky Agriculture Heritage Center will create an environment for learning, reflecting on the past, showcasing the present, and fostering the advancement of Kentucky agriculture. Agricultural development funds will be used for the market and development study, the architectural design and development, and the marketing and promotion of the center.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Complete a business development and marketing study for the center
2. Complete the final architectural design for the center.
3. Continue to work with Kentuckys agricultural organizations to secure their input and involvement on the development of the center.
4. Develop a grass roots effort with county agricultural leaders to ensure that the agricultural history of all counties is represented in the development of the center.
5. Continue to develop the relations with the Kentucky History Center in an effort to establish an overall program of Kentuckys agricultural industry.

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *This project was already started before the grant. The grant is a small part of the total project.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *85-95 people will be hired. Tens of thousands of youth will be affected by planned statewide youth education programs. New store, new promotional programs, and an interactive facility.*
3. How have ADF investments leveraged other resources? *By matching funds and development grants.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Kitchen and market will support Ag entrepreneurship. Agriculture and school groups who use the facility will contribute to local leadership development.*

Organization: Kentucky Department of Agriculture Agri-tourism Interagency

Project Title: Agri-tourism Study and Coordinator

Award: Grant \$400,000, July 2003

Description: The Agri-tourism Interagency is an interagency between KDA and the Kentucky Department of Tourism (the two organizations have already agreed to continue paying the Agri-tourism Directors salary indefinitely after the ADB money has run out). The Interagency acts as a clearing house for information and as an advocate/liaison to the legislature on behalf of businesses. Information provided to individuals includes that on insurance, zoning regulations, signage and advertising opportunities, etc. This information is provided through educational work shops, seminars, at regional agri-tourism group meetings, and training sessions. The overall purpose of the Interagency is to make agri-tourism a viable part of the tourism business for the state of Kentucky.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Hire a full-time agri-tourism coordinator who shall be an employee of KDA. The coordinator shall have overall responsibility to facilitate, coordinate, and manage the activities of the program and will be charged with leading and documenting the comprehensive development of the Kentucky Agri-tourism statewide plan. *Accomplished*
2. Create a statewide master plan. *Accomplished although a continuous work in progress.*
3. Retain an independent third party, with specific background in tourism, for the purpose of conducting feasibility and marketing study. Third party will produce a document that establishes a framework and guidelines for marketing agri-tourism in the Commonwealth. *Accomplished*
4. Host retreat workshops and planning sessions in each of Kentucky's 9 tourism regions. *Partially accomplished. Five out of the nine regions have established agri-tourism organizations with the help of the Interagency and thus have had works shops and training sessions. The Interagency continues to work to create the final four organizations in the state.*
5. Develop a state of Kentucky Agri-tourism website. *Will be accomplished very soon.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *Agri-tourism would not be a viable part of the Kentucky tourism business.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *5 regional agri-tourism organizations have been created. 15-20 new ag related businesses have been created. More than 100 mostly seasonal jobs have been created. Almost all farms involved have added retail components and or began making value-added products including salsa, apple pies, and canning. Net sales have increased for 250+ farmers due to the increase in KY farm commodities purchased by the 45-50 participants. Educational seminars and workshops have been conducted throughout the state to promote leadership and entrepreneurial development. A new viable market is being stimulated to help farmers diversify away from tobacco especially.*
3. How have ADF investments leveraged other resources? *The Interagency was able to leverage \$249,171.43 from the USDA Rural Business Enterprise Grant fund due to having the ADB funds. The ADB funds also lead to an agreement between KDA and the Kentucky Department of Tourism to continue to fund the Agri-tourism Director indefinitely.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *This Interagency has supported county leadership and entrepreneurship through regional agri-tourism organizations so far in five out of nine Kentucky regions.*

Organization: Commodity Growers Cooperative Association, Inc.

Project Title: Buffalo Trace Hay and Produce Auction

Award: ADF Grant \$190,000, November 2003

Description: Commodity Growers Cooperative Association (CGC) is a non-profit farmer organization started in 1943 that is operated as a subset of the Burly Tobacco Cooperative in Lexington, KY. Commodity Growers Co-op seeks to help farmers diversity into additional crops other than tobacco. In September of 2003 CGC applied for an ADF grant in order to build an auction facility in N.E. Kentucky to sell hay and produce crops. The goal was to provide market opportunities to expand hay and produce production in the area and thereby create additional farm income.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Establish wholesale hay and produce auction in Maysville KY that will create marketing opportunities for producers as well as improve the profitability of their farm operations. *Built a wholesale produce and hay auction facility in the Maysville area. Conducting produce and hay auctions. Providing additional marketing opportunities for hay and produce.*
2. The recipient or its affiliate shall promote, market and manage the day-to-day operations of the auction the first year. After the initial year of the auction, a grower group may be organized to manage the auction. *Promotion is on-going. A grower advisory board has been established. CGC is still providing the auction management at this time.*
3. Other requirements pertained to the matching of ADF grant funds. *Accomplished.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *There would be one less marketing outlet in N.E. Kentucky for wholesale sales of produce and hay.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Approximately \$150,000 in produce sales and \$20,000 in hay sales during the first three years of operation. CGC auction manager and the County Agriculture Extension Agent believe the produce auction will grow, particularly in light of some new Amish farm families moving into the area. They have 675 buyers and 250 sellers names on the auction records at this time. Some of the produce sales have had 100 or more people in attendance. The 2006 project report to GOAP states 95 farmers have been impacted to date from 9 counties.*
3. How have ADF investments leveraged other resources? *Over a 100% match.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *There appears to be community support for the auction.*

Organization: Burns-Larkins Farm, LLC

Project Title: Goat Farm Expansion and Enhancement

Award: ADF loan \$182,660 and ADF Grant of \$77,250, February 2002

Description: Burns-Larkins farm was a for profit farm located in Mercer County, KY that focused on Boer Goat production for breeding stock. During its operation the BLF was the largest goat farming operation in the state. Two Mercer county farmers; Bobby Watts and Michelle McAfee started raising Boer Goats (1996) during the early stages of goat production interest in the Southeast. They met with some success. They teamed up with a larger landowner Ms. Laura Murrell to expand the goat enterprise. A business plan was developed to increase the size of the breeding flock, build additional facilities and work with the University of Kentucky to provide a goat demonstration farm facility to advance Boer Goat production throughout the state.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Provide a source of reliable economic data on raising meat goats in Kentucky. *Burns Larkins Farm was not a typical farm operation or marketing structure because of this the farm may not have been useful in terms of economic data. The farm is no longer in operation.*
2. Provide a practical source for those developing educational materials on meat goats in Kentucky. *Accomplished in terms of animal husbandry but maybe not economics.*
3. Provide a large scale site for field days and more specialized goat producer training sessions with adequate animals available at all stages throughout the year. *Accomplished.*
4. Provide orientation tours for interested farmers year round. *Accomplished.*
5. Provide a large farm convenient to UK, KSU and travel from around the state. *Accomplished. However, the farm is no longer in operation.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *KY farmers were provided for four years 2002–2006 with a meat goat demonstration farm for educational and research purposes. Kentucky goat farmers would be less informed and therefore less efficient in goat production with out this project.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Direct sales generated for other KY goat farms: Approximately 450 meat goats sold through the Fort Harrod Goat Association valued at \$31,500 in annual sales for four years = \$126,000 in goat sales. For an estimate of the value of education, training and research activities of the farm: Approximately 1,000 people visited the goat farm over the four year period of operation. Assuming 70% of these people were in or entered goat production and that all of these producers learned better goat husbandry techniques and further that the result was production improvements of 20%. With an estimated average goat herd size of 25 head, a 20% increase amounts to 5 goats. 5 goats X 700 producers X \$70 each = \$245,000 in goat income improvements for the total life of the project.*
3. How have ADF investments leveraged other resources? *The ADF funds were used to leverage a \$300,000 bank loan for the project.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *The Fort Harrod Goat Association is still in operation and holding goat shows and sales in the area.*

Organization: Burton Livestock, Inc.

Project Title: Holstein Heifer Replacement Program

Award: Forgivable loan \$419,818, June 2006

Description: Burton Livestock raises replacement dairy heifers on contract for dairies, mostly Dutch Dairies in the upper mid-west US. Burton Livestock contracts to purchases new born dairy heifer calves from dairies and raise them to the bred heifer stage. He then sells the heifers back to the dairy they were born at. Mr. Burton works with other farmers in the area to have the calves bottle fed, back grounded, and then bred before they are ready for sale.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Expand Burton Livestock facilities and purchase equipment to increase their dairy heifer replacement business. Equipment includes a weaning barn, additional concrete feeding areas for larger cattle, and a silage chopper. *Accomplished.*
2. Contract with other farmers in the area to help raise the heifers as well as grow crops to feed the heifers (minimum of 10 tobacco dependent farmers per year). *Accomplished.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Some Kentucky tobacco-dependent farmers would not have diversified into Holstein heifer replacement raising without Burton Livestock. Burton Livestock would not be able to be as successful as it is without the ADF funds.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *35-40 farmers have joined the Burton livestock heifer replacement business under contract arrangements. Mr. Burton states that currently they are paying approximately \$80,000 per month to other farms for their work to background cattle between 400-800 pounds. Mr. Burton states that currently they are paying approximately \$40,000 per month to other farms for their work raising bottle calves. Mr. Burton states they currently pay out \$1.4 Million dollars annually to contracted farmers for livestock*

raising. Burton livestock has hired 11 additional full-time employees from \$8-\$15/hour. 5 young farmers are involved, 5 part time farmers are involved.

3. How have ADF investments leveraged other resources? *The ADF investments helped Burton Livestock leverage a \$5 million loan from Farm Credit Services.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *This ADF funded project has not contributed to county leadership. Entrepreneurial leadership is being demonstrated by the owners of Burton Livestock.*

Organization: Kentucky Cattlemens Association (KCA)

Project Title: Collaborative Marketing

Award: Grant \$1,930,000, February 2003

Description: KCA is a non-profit organization that received a one time grant from the ADB for promotional and educational efforts. The grant was used in a collaborative effort to promote Kentuckys beef, pork, and vegetable industries as well as educate consumers and children about the importance of KYs agriculture industry. Most of the funds have been used to purchase advertising: TV ads, print ads, website development and RFD TV shows. Another large component has been funding COSI: "KY Ag Adventures traveling youth agriculture learning experience for grades K through 6.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Promote the achievements of the cattle, hog, and vegetable producers and their producer groups that have received funding from the ADB. *Accomplished and continuing.*
2. Increase marketing efforts for cattle, hogs and vegetable producers, in order to make the commodity a consumer demanded and viable end product. *Accomplished and continuing.*
3. Create promotional initiatives that focus on buyers of Kentucky cattle, and assist those buyers in distinguishing Kentucky cattle from others in terms of quality and consistency. *Accomplished and continuing.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Less Kentucky consumers and policy makers would be aware of Kentucky produced beef, pork, and vegetables without the ADF investments which made this marketing campaign possible. Also, thousands of the states youth would have less educational opportunities related to agriculture.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *CPH 45 sales have increased since beginning of the ad campaign, specifically with out of state buyers. Increased awareness of KY markets. 77,151 Kentucky youth have participated in the Ag Adventures program between 2005 and 2007.*
3. How have ADF investments leveraged other resources? *Advertising money was matched with beef and pork check off dollars, magazine ads leverage free publicity with articles about KY agriculture, stockyards matched some advertising money, and CPH 45 producers funded 50 cents per head check off fee for promotions.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Organization: Cumberland Farm Products Association, Inc.

Project Title: Cooperative equipment upgrade and operating capital

Award: \$684,649 total

Description: Cumberland Farm Products (CFP) is a private non-profit vegetable marketing facility in south central Kentucky with members/growers from counties in the Lake Cumberland area plus ten other counties in Kentucky. CFP was organized in 1969 by a few small farmers committed to growing small acreages of various commercial vegetable crops to be marketed through the cooperative. The co-op has struggled in recent years as some members have found other more lucrative markets to sell there produce to and others have stopped farming. Wholesale sales of cabbage only occurred in 2005 and 2006. The wholesale packing and shipping operations of the co-op stopped after the 2006 produce season.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Continue to provide services to Russell, Casey, Green, and Taylor county growers by providing a facility to market their produce. Overall there has been less volume than was expected
2. Purchase plastic vegetable bins to replace wooden bins that are no longer approved by buyers. Purchase and install new cooler walls and ceiling. Update computer system at Russell Springs and Monticello facilities.
3. Operating capital to develop marketing strategies, recruit new members, attend trainings, conduct research, and make repairs and maintenance to the facilities.

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Cumberland Farm Products would no longer exist.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *More than 40 50 tobacco farmers were impacted by this project. At least nine counties are directly impacted. 26-50 farm youth are affected by this project. Almost every farm family in the region has used the coop or been affected by it. Marketing and market development is the main priority this project contributes to.*

3. How have ADF investments leveraged other resources? *Paid the bank, cleared debt to get credit.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Some board training.*

Business: Christian County Grain Inc.

Project Title: Corn Cleaning and Processing Plant

Award: ADF forgivable loan \$292,419

Description: Christian County Grain Inc is a privately owned grain elevator located in Pembroke, KY. CCG is a family business that was started by Mr. Covingtons father. CCG buys white and yellow corn from local farmers. They then clean, store and market the grain to food and feed manufacturers. CCG started selling bagged “deer corn to Southern States Cooperative. This went well so Mr. Covington decided to expand their capacity to bag corn and had a possible deal with Wal-Mart. They also decided to expand their capacity to handle food grade corn (white and yellow) by building more grain storage to segregate the food grade corn from commodity feed corn. CCG applied for ADF funds in August of 2001.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Continue operations during the five year agreement as outlined in the business plan submitted. *On going business. Volume has not grown as fast as predicted but no change in plans.*
2. Continue to operate the business and provide specialty corn cleaning and processing to KY growers on a non-discriminatory basis. *Accomplished, on going business.*
3. Pay KY farmers a premium equal to 10 cents per bushel for specialty yellow corn and 15 cents per bushel for specialty white corn in accordance with the grower contract as submitted in the agreement with the ADB. *Currently they are paying from \$0.05 to \$0.15 cents more per bushel for white and yellow corn for corn chips and \$0.02 to \$0.03 cents more for yellow corn to be bagged for deer corn*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Twenty grain farmers would have less market opportunities to grow and sell specialty corn.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Presently CCG is working with 20 different KY grain farms to sell into the food grade and bagged corn markets. With additional processing and storage capacity CCG will be able to expand these markets thereby providing additional premiums to KY grain farms. CCG total sales in 2006 of deer corn = 150,000 bushels. CCG sales of specialty food grade corn for corn chips = 250,000 bushels. At the premium levels stated above, the approximate additional farm income generated (above the normal market price) from this project in 2006 is estimated at \$27,750. When the project is fully operational this amount of annual premiums paid should go up.*
3. How have ADF investments leveraged other resources? *CCG matched the ADF award with an equal amount of money.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *No effect.*

Organization: Central Kentucky Growers Cooperative (CKGC)

Project Title: Cooperative Expansion and Upgrade

Award: Total ADF funds received: \$975,488 (2001-2006)

Description: CKGC is a vegetable marketing cooperative located in Georgetown, KY that started in 1998 and is currently made up of 10 farmers. The co-op started with approximately 25 acres and has expanded over the years to currently have approx. 165 acres total. Expected gross sales per year vary from approx. \$700,000 to \$1 Million. Co-op started in 1998 with two farmers from Scott County and two farmers from Clark County. Start up money came from Kentucky Department of Ag and the USDA.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Purchase certain equipment including forklifts, a refrigerated delivery truck, a packaging and grading line, and computer software. *accomplished*
2. Explore the possibility of using idle tobacco greenhouses to produce hydroponic lettuce. (E.g. Will act as the marketing agent for the product and will conduct project in conjunction with UK College of Ag, Bourbon and Scott County CES, and 5 local greenhouse producers.) *accomplished*
3. Update product line, continue efforts in year-round marketing, and stabilize the finances of the cooperative. *Partially accomplished. Darryl Fryman believes the goal was set unrealistically high considering the amount of products that can be processed in the current facility and market availability.*
4. Retire existing debt. Dissolve as co-op and reorganize as an LLC. *In process.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *CKGC would not be in existence under any form without the ADF investments. Most, if not all, of the other co-ops in the state would also not be in existence.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *10 full time farmer positions, 1 full time management position as well as 40 seasonal jobs. Expanded market through better equipment and expanded product*

line. Feasibility of hydroponic lettuce being grown in greenhouses in KY was confirmed. Co-op gross sales per year \$700,000 \$800,000 annually. Net sales from hydroponic lettuce totaled approx. \$8,000. All full time farmers were previously dependent on tobacco

3. How have ADF investments leveraged other resources? *CKGC has been able to leverage USDA grant dollars; county donations of land, blacktop and site work; and member investments on farms to grow vegetable crops.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Currently the 10 farmers involved in CKGC want to continue produce farming and turn the co-op business into a privately owned LLC.*

Organization: Community Ventures Corporation (CVC)

Project Title: Agricultural Micro Enterprise Development

Award: Grant \$275,000.00, May 2002

Description: With the ADF monies, CVC utilized a three-pronged approach to assist in achieving the states goal of strengthening tobacco-impacted communities. These strategies included 1) providing training and technical assistance to assist in the start-up or expansion of agriculture related businesses; 2) providing training and technical assistance to other types of micro enterprises to assist in diversification from tobacco; and 3) providing capital to agriculture and non-agriculture businesses who cannot access conventional financing to stimulate business start-ups and expansions.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Implement a microenterprise development program targeted to Kentuckys agricultural entrepreneurs. *accomplished*
2. CVC must not approve any participant in the revolving loan program unless they have demonstrated an inability to access loans from traditional lending institutions. *accomplished*
3. Deliver specialized business planning training and technical assistance to farmers. *accomplished*
4. Establish a loan loss reserve. *accomplished*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Hundreds of farmers across the state would have never had the opportunity to receive training, technical assistance, and financial loans without CVC.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Provided \$464,100 in loans directly to farmers, and provided an additional \$351,100 to entrepreneurs in ag-dependent communities. Implemented an intensive training and technical assistance program for over 300 farmers, including youth farmers, as well as non-ag related entrepreneurs, to foster start-up, stabilization and expansion of small businesses in ag dependent communities. Farm Youth Program provided 6 high school students with leadership skills development, which helped them to be successful in their respective ag communities as well as provided capital to assist the youth farmers in starting new agribusinesses. Provided capital to farmers and other types of businesses to assist them to purchase equipment, supplies, and stock.*
3. How have ADF investments leveraged other resources? *ADF monies allowed CVC to leverage approximately \$650,000 in funding from other sources.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *The Farm Youth program has instilled skills into the participants that should help them to become leaders in their own agricultural communities.*

Organization: Creech Services

Project Title: Composting Production Expansion

Award: \$598,309 forgivable loan and \$20,000 grant, August 2005

Description: Funds used for infrastructure expansion to an existing business. The expansion consists of increasing the size of the concrete composting pad by 10 acres, expanding the no-discharge water collection basin, and constructing a finished goods storage shed. The expansion will allow Creech Services to triple their compost production. Increased production will allow Creech to provide compost to tobacco dependent farmers who can prove tobacco dependency with proof of receipt of a phase two check or a buy out check. Forgiveness of the grant for the infrastructure expansion occurs upon the receipt of product by the participant at a value of \$15 per cubic yard. The raw materials that are used in the composting process are collected from horse farms in the bluegrass. This is turned into a value added product that has soil enhancement properties.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Achieve forgiveness of \$59,830 per year for 10 years (40,000 yards total). *Currently 25,000 yards has been distributed, and 40,000 is expected to be complete by the end of 2008.*
2. Offer every tobacco dependent participant an opportunity to try and experience the benefits of using compost. *210 farmers so far*
3. Generate repeat business *Many farmers are repeat customers*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *If it were not for the ADF money, compost production would not have been expanded.*

2. What have been the quantitative and qualitative impacts of ADF expenditures? *Provided incentives for environmental stewardship by providing an organic soil amendment which enhances soil tilth and biological activities . It increased net farm income for local farmers (and added value to KY agriculture products, and enhanced existing farm enterprises) by providing an opportunity to increase prices and income by through organic production. Also, crop response is better with this organic compost. Two new full-time jobs were created. The project enhanced the viability of young and part-time farmers by providing opportunity for alternative production methods. Of the 210 farmers about 80% are part-time. The main priority or goal of this project is marketing and market development, but the project also provides a financial incentive for environmental stewardship. The ADF investments have helped tobacco farmers move on to producing new crops. The ADF helped the transition through trials, experiments, and economic incentives. "For once Ive seen a program that actually benefited farmers. They have embraced it and worked it. This money went to the farmers, just indirectly. Participation has been far beyond what was anticipated and repeat participation has been high.*
3. How have ADF investments leveraged other resources? *Internal funds were leveraged to finance the expansion (greater than a one-to-one match).*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *This project supported agricultural entrepreneurship by providing farmers with a local source of organic soil amendment (compost) to use on new crops. It also supported local leadership by promoting compost use through the Extension Office and Garden Club.*

Organization: UK Research Foundation

Project Title: Entrepreneur Development for NE KY (Entrepreneurial Coaches Institute)

Award: \$1,282,206 grant, March 2003

Description: The Primary objective of this project is to encourage the development of new business ideas and ventures in 19 tobacco dependent counties of Northeastern Kentucky. These counties include Bath, Bracken, Carter, Elliot, Fleming, Grant, Greenup, Harrison, Lawrence, Lewis, Mason, Menifee, Morgan, Nicholas, Owen, Pendleton, Robertson, Rowan, and Wolfe. The objective to develop new businesses will be achieved, in part, by identifying and training 60 leaders from the region who are willing to work with entrepreneurs to encourage economic diversification projects. It is expected that these 60 leaders will in turn reach out to more than 3,000 others over the two-year project period.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. To conduct research on the state of entrepreneurship in Northeastern Kentucky; and to identify those "best practices in rural areas around the world in which builds entrepreneurship and economic diversification applicable to NE KY.
2. To develop a ground swell of support from tobacco farmers, community leaders and citizens by holding meetings in the region to solicit economic diversification ideas and to identify those in the region who have a reputation for assisting entrepreneurs.
3. To train a diverse group of sixty (two classes) encourages and facilitators from the 19 county region with a goal of further stimulating development of diverse economic diversification projects.
4. To challenge participants in this pilot effort to think about the lessons learned from the leadership experience so that they can help individuals and business firms in the region to initiate new business and/or expand existing ones.

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *The participants in the 19 county region of NE KY would not have the experience and education provided by the Entrepreneurial Coaches Institute.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *This project 30-40 farmers directly and 70 more indirectly. Half of the farmers impacted were or are tobacco farmers. The project impacted 18 tobacco dependent counties (19 in application). 25% of ADF funds for this project was spent on personnel and 75% was spend on operating. This project provided mini-grants to groups of farmers, support for agriculture entrepreneurship, support for local leadership development (6 people ran for political office on an entrepreneurial platform), incentives for environmental stewardship (through one mini-grant). Project included evaluation in the proposal and an independent evaluation was conducted. It was suggested that every project should have 5-10% of money set aside for evaluation purposes.*
3. How have ADF investments leveraged other resources? *Babcock foundation, ag-tourism foundation, full-time entrepreneurial coach in Maysville is a permanent funded position.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *The entire project is intended to "foment an entrepreneurial culture.*

Organization: Equus Run Vineyards, LLC.

Project Title: Winery Expansion/Upgrade,

Award: Grant \$263,825.00, November 2001

Description: Equus Run Vineyards is located on a 35 acre old farm in Midway, KY. The vineyard focuses on agri-tourism but also sells wine (and other items) which is their core of competency. Their motto is "visit the vineyard and taste the experience. The owner, Cynthia Bohn, bought the property in 1997 and started the vineyard in 1998 making it into a full service winery (from soil to shelf). Equus Run has met the Agricultural Development Boards goals and priorities by converting a farm into

a wine processing facility, promoting Kentucky value-added products, expanding employment and production, and becoming a direct market for Kentucky growers.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Upgrade grape processing facilities with permits and equipment installation services, site preparation (electric, duct-work, plumbing, and loading dock), utilities (electric converter upgrade, HVAC equipment upgrade), grape processing enhancements (stainless steel equipment), refrigeration cooler upgrade, and grower education and outreach materials. *accomplished*
2. Make facility available for wine processing by any Kentucky residents who desire to create and market their own private label brand. *accomplished*
3. Provide insight, knowledge, skills and experience to producers and residents that are utilizing processing and production services as well as grape growers. *accomplished*
4. By June 30, 2003, Equus Run must have contracted with at least 21 Kentucky grape growers to purchase at least 45 acres of grapes. *accomplished*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Equus Run could not have developed into the large scale vineyard that it has become without the ADB funding. Without Equus Runs development, Kentuckys wine industry would not be where it is today.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *A new retail market for Kentucky-made products has been created (Equus Run sells honey, salmon, beer cheese, beef sausage, wholesale wine, jellies, sauces, etc. made by fellow Kentuckians). Diversification of agriculture in Kentucky has increased with Equus Run. Educational workshops have been held on how to grow grapes and prune correctly. A new venue for agri-tourism in Kentucky has flourished. Grape growers have been provided monetary compensation for environmental stewardship (an additional 10% for the extra time it takes the farmer to grow as naturally as possible). Farmers have conducted research and development of new clonal varieties. Net farm income has increased (net of approximately \$3,300/acre). 43 farmers with 104 tons of grapes at \$1,000/ton = \$140,000 additional farm income annually. Created 15 new wine types. Have 34 total employees (3 full time with benefits, 17 year round and 14 seasonal part time staff making \$9-\$14/hour working 20-39 hr/week).*
3. How have ADF investments leveraged other resources?
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Cynthia Bohn herself is truly a leader in entrepreneurship for the state of Kentucky as well in her own county. She is a leader in many organizations throughout the state and is asked to speak about her success with Equus Run often.*

Organization: ESF Compost, Inc. (ESF)

Project Title: On farm Composting Operation

Award: Forgivable loan \$143,100, December 2003

Description: Elmwood Stock Farm is a privately owned farm in Scott County KY. The farm produces cattle, sheep, chickens, produce, hay and tobacco. Part of their farming operations are certified for organic production. In 2000 and 2001, because of the diversified nature of their farming operations the farm owners decided to participate in a compost making demonstration with the local RC&D Council. A mechanical windrow compost turner was loaned by the RC&D to start on farm composting. Based on this experience and the knowledge that local farms and a produce cooperative had organic waste that was a disposal problem, the owners decided to start a compost business. ESF Compost, Inc was formed and an application of ADF money was submitted in September 2001.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Continue operations during the five year agreement as outlined in the business plan submitted. *On going business. Volume is considerably less than originally predicted. No change in business plan.*
2. Continue to operate the business and facilities for its on-farm composting. *On going business.*
3. Offer KY farmers priority to dispose of organic waste when space is available. Sell compost at a 15% discount to farmers that bring in organic materials for processing. *Currently they are excepting organic materials but not actively pursuing business as they are not able to sell compost to farmers who can receive free product instead.*
- 4.

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *There would be less free organic waste disposal options available to Central KY farmers.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *N/A*
3. How have ADF investments leveraged other resources? *EFS Compost used the ADF money to leverage a bank loan*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Organization: Commonwealth Agri-Energy, LLC

Project Title: Ethanol Production Facility

Award: \$9,500,000 Loans, January and February 2003

Description: To design and construct a grain processing plant to replace lost tobacco income, add value to Kentucky corn, and provide a cheap feed source for Kentucky cattle, poultry and aquaculture. Tobacco is a major source of income for the participants. The 30 member counties of the co-op represent 85.2 million pounds of tobacco in the state of Kentucky. 100% of the 2300 co-op members are involved in tobacco production. 2300 plus farm families directly benefit from the project. Member counties grow nearly 82 million bushels of corn. At the time of the application, every member of Hopkinsville Elevator Company was a member of Commonwealth Agri-Energy. The co-op has average annual sales of over \$65,000,000 and has over 100 employees. Total project cost was approximately \$32,500,000.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Create an integrated, sustainable, environmentally friendly and stable agriculture program for Kentucky.
2. The driving force for this project would be a strong statewide market for corn and other grains.
3. The grain processing plant could produce fuel and industrial grade alcohol, carbon dioxide, corn oil and corn sweeteners.
4. It would also integrate agriculture throughout the commonwealth of Kentucky by providing a reliable feed source, especially feed for swine, aquaculture, poultry, and equine.
5. Process 20,000,000 gallons of ethanol annually

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *Bank loan would not have been approved without the ADB award. Kentucky corn growers would not receive as much money as they are now without this project. There would be no market in KY for ethanol, and the market for poultry, swine feed, and CO2 would be smaller.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *2300 farmers are impacted directly. Created 30 new jobs in the local economy (plant employees) plus indirect jobs. Developed several new value-added products including corn oil and wet feeds, which created a new market for KY ag products. Increased net farm income for farmers (44cents/bushel patronage refund). 22m bushels, 12m bought. Developed 1 new ag related business (Com-As. Payne Enterprises). 100% of the funds for this project were spent on equipment and construction. The project impacts 120 counties, but mostly impacts 6 counties. Many of the producers continue to grow tobacco (estimated less than 25% quit). This project expanded the existing market for corn, and enhanced the viability of young and part time farmers through the impact on its members. The plant offers public tours for various groups.*
3. How have ADF investments leveraged other resources? *ADB funds have leveraged bank loans and contributions from producers.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *This project indirectly provided support for ag entrepreneurship. This project has supported every local politician and the local chamber of commerce advisory board.*

Organization: Evans Orchard & Cider Mill (EOCM)

Project Title: Cider Processing Facility

Award: Forgivable loan \$122,923, April 2001

Description: Evans Orchard & Cider Mill, LLC is a privately owned farm business in Georgetown Kentucky. The Evans family diversified their cattle and tobacco farming operation first into commercial vegetable crops and then an apple orchard. To add value to their produce crops they decided to add a cider mill and direct marketing outlet. EOCM applied for ADF money in 2001. They were one of the first ADF projects funded. The loan was awarded in April 2001. The goals of the ADF proposal were to develop a cider processing facility that was large enough to process their apples as well as apples from other KY apple orchards.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Develop a state of the art cider processing facility and provide services to all KY orchards that want pasteurized, high quality, fresh cider. *Accomplished. Evans processed approximately 15,000 gallons of cider in 2006.*
2. Make available custom cider processing to other KY orchards. *Evans processed apples into cider for eight other KY orchards in 2006. At retail (\$5.00/gal) the value of the cider is estimated at \$75,000.*
3. Evans Orchard & Cider Mill must continue operations and provide services to other KY apple growers for at least 5 years. *On going. The business continues and the cider operation earned its first profits in 2006.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *KY apple orchards would not have the ability to get their apples processed into cider at an in-state area processing facility.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *In addition to Evans Orchard, eight other KY orchards have gotten their apples custom processed and labeled for retail sales. The volume of cider produced went up dramatically from 2005 = 2,000 to 2006 = 15,000. 2007 being a drought year the volume is not expected*

to increase but probably will go up in the next normal production year. The value of the 2006 cider produced at \$5.00 per gallon retail is \$75,000, without making these (usually blemished) apples into cider this additional farm income probably would not have been generated.

3. How have ADF investments leveraged other resources? *The ADF funds were used to leverage a dollar for dollar bank loan of \$123,000.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Mr. Evans daughter was able to come back to the farm after college and be employed full-time in the cider and retail operations of their business.*

Organization: Kentucky FFA

Project Title: Youth Endowment Program

Award: \$2,000,000 grant, October 2001

Description: Through Project LEAD, the Kentucky FFA Foundation has set up an endowment trust fund to create perpetual interest funds to support leadership, entrepreneurship, and agricultural development activities of the Kentucky Association FFA and the National FFA Organization. A primary aim of this project is to assist Kentucky FFA members and future agriculturalists through innovative proposals that ultimately will increase net farm income and provide economic benefits to tobacco families and tobacco-impacted communities.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. The goals and objectives outlined in this projects proposal closely tied to the goals of the Kentucky FFA and to the goals of the ADF. The goal of the Kentucky FFA is to provide incentives to members striving to develop their future leadership skills and their efforts to develop economically viable agricultural production and entrepreneurship enterprises that will lead to personal growth and future career success.
2. One of the ADF goals is to support areas related directly to the growth and expansion of agricultural economic development activity in the Commonwealth. The goal of this project is to contribute to the future development of agriculture in the Commonwealth through project FFA LEAD- Leadership, Entrepreneurship and Agricultural Development.
3. Provide college scholarships to the best and brightest future leaders the State FFA officers. Sponsorship of students to leadership based activities such as Kentucky FFA Leadership Camp, regional and state leadership conferences, Washington Leadership Conference, and others. To support the National FFA Convention as long as it is held in Louisville, KY. The conference is no longer held in Louisville, and that goal was not included in later reports.
4. Sponsorship of FFA Proficiency Awards to encourage entrepreneurship. Sponsorship and incentives for a state Agricultural Entrepreneurship Award program. Mini-grants to tobacco dependent students to develop and diversify their agricultural operations. Mini-grants to FFA Chapters for innovative projects of agricultural development and/or diversity. Sponsorship of FFA Proficiency Awards in areas to encourage development of diversified agricultural projects

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Without this project there would be fewer opportunities for farm youth to access capital.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *This project has directly impacted about 50 farm youth per year through mini-grants and cost share. \$50,000-60,000 total have been awarded (10k per year). 1500-1800 youth were affected by this project through classes. Estimated half of participants are from tobacco dependent families. Estimated one third of participants are from a traditional ag background, one third part-time, and one third non-farm. 100% of the funds for this project have been spent on operating expenses including scholarships, awards, travel, and mini-grants. Increased net farm income for local farmers through expanded acreage, livestock numbers, and new enterprises. Increased farmer computer literacy through improved software.*
3. How have ADF investments leveraged other resources? *Leveraged funds from local chapters, individual participants, and national contributions.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Supported local leadership through experience and training programs. Provided support for agricultural entrepreneurship through ag mechanics, welding, and automotive skills classes.*

Organization: Fishmarket Seafood, Inc.

Project Title: The Kentucky Freshwater Shrimp Alliance

Award: Forgivable loan \$109,250, November 2003

Description: Fishmarket Seafood, Inc (FMS) is a company started in 1988 as a seafood wholesaler, processor and distributor by Steven C. Smith and Jere W. Smith (brothers). They initially had four employees and a 1,500 sq. foot facility. As the company grew over the years they increased their operations. At the time of our interview they were working from their third facility and handling a larger volume of seafood as well as other meats. Their customer base is comprised of approximately 70% retailers (Kroger) and 30% food service (Sysco). They also service a few restaurants.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Purchase equipment needed to properly process prawns into different product forms. *Contracted with the Purchase Area Aquaculture Co-op to get the prawns processed. Used the remaining equipment money to “buy down the price of KY grown prawns in order to facilitate sales.*
2. Develop an attractive packaging program including graphic design and production of high visibility bags. *Accomplished. KY Prawns were marketed in 1 lb. high graphic bags in Kroger grocery stores around the state.*
3. Work with chef and food scientists to establish safe handling recommendations, recipes and value-added product forms which best showcase the product attributes. *Accomplished.*
4. Evaluate different product forms in several potential retail environments. *Sold first in 2lb. bags with limited success. Went to 1 lb. retail bags which were more affordable for consumers.*
5. Conduct a promotional campaign to launch the product. *Advertising expense was not reported. In-store demonstrations introducing KY freshwater shrimp were conducted in Kroger stores.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Kentucky farmers, entrepreneurs, university personnel and government officials would not know if KY freshwater prawns had a larger potential beyond pond side on-farm direct sales.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Contracted KY farmers were paid \$6.00 per pound pond side for ungraded prawns for this project. A total of approximately \$150,000 of prawn purchases were made during the two year trial period (2004–2005). Seventeen farms were affected. FMS achieved the loan forgiveness requirement during the course of the two years in operations.*
3. How have ADF investments leveraged other resources? *FMS estimated the total cost for their part of the project was \$206,072. Using this figure the ADF funds were approximately matched dollar for dollar by the applicant.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Organization: Goodinview Farms, Inc.

Project Title: Vegetable and Aquaculture Processing and Marketing

Award: Forgivable Loan \$439,537

Description: Goodinview Farms is a for-profit, privately owned business in Lebanon KY. They grow corn, soybeans, tobacco, cattle and vegetables. They started growing vegetables around 2000 and trucked them to Monticello, KY to be packed and sold by Cumberland Farm Products. The timing didnt work out as CFP would be shutting down about the time Goodinview was just starting to harvest their crops. They decided to build a produce packing shed and market their own produce and produce from other farms. They built a produce packing and cooling facility during 2001–2002. They began working with other farms to pack and sell their produce. They also began raising fresh water shrimp (prawns) and hybrid striped bass.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Build an operate a produce and aquaculture packing and marketing facility in Lebanon KY. *Accomplished and on going*
2. Continue to operate the facility and provide a market for Kentucky agriculture products. *On going, however there may be few other farms participating. Aquaculture production and marketing did not work out. Aquaculture production and marketing has ceased.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Marion County farmers would not have the option of growing commercial fresh produce crops for sale to out-of state markets*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *25 acres of additional produce from other farms at \$1,500 per acres = \$37,500 added farm income, at least \$99,163 dollars of KY farm products have been purchased and marketed by Goodin View Farms (per June 9, 2006 forgiveness letter from GOAP on file) and possibly by 2007 as much as \$200,00 as stated by Mr. Goodin 9-11-2007. In addition Goodin View Farms has a larger capacity to process and market produce for themselves and others.*
3. How have ADF investments leveraged other resources? *The loan was used to expand and operate a \$1.4 million dollar facility built with private funds.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Organization: Kentucky Grape and Wine Council (KGWC)

Project Title: Technical Assistance for Wine and Grape Production

Award: Grant \$785,125, July 2003

Description: The KGWC , UK Department of Ag, and the Kentucky Viticulture Society jointly applied for this grant. The KGWC was established by legislation in 2002 “to promote and facilitate the development of a grape industry in the Commonwealth of KY (KRS Chapter 260). The KGWC consists of the Commissioner of Ag or his designee, and nine members appointed by the Governor. Seven are chosen from a list of candidates submitted by the Director of the Ag Experiment Station (1), the Secretary of the Tourism Cabinet (1), and the Kentucky Vineyard Society (5). The Governor appoints two members from the citizens-at-large. The Kentucky Department of Ag provides administrative support for KGWC.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Develop a new and viable agricultural industry that is alternative for KYs small farmers. *accomplished and continuing*
2. Provide new opportunities and employment for KY tobacco farmers through diversification into commercial grape production. *accomplished and continuing*
3. Assist new and existing grape growers in producing quality grapes by providing them with research-based production expertise and guidance from the state viticulturist to secure marketability and a premium price. *accomplished and continuing*
4. Assist new and existing wineries to produce quality wines by providing them research-based winemaking expertise and guidance from the state enologist. *accomplished and continuing*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *There would be no KGWC without ADF investments. Without KGWC the state would have far fewer wine makers, grape growers, and in turn net profits from these sectors.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *585 acre increase of grapes (157 growers) and 36 additional wineries. Wine production in the state had increased by 83% in 2006 from 2005. Educational workshops and meetings have educated KY farmers how to grow grape and or make wine on a commercial basis. The State Viticulturist and State Enologist have consulted with almost all of the wine grape growers and wine makers in the state to help improve their businesses in a variety of ways. Millions of dollars generated due to agri-tourism and wineries. Successful partnership between UK, KDA, and KGWC. Many grape and wine trials have and continue to be conducted (research and development). The potential long-term impact of the current 700 acres of wine grapes, when fully in production and made into wine could generate as much as \$26.5 million dollars in wine sales and an additional 21,000 jobs in the tourism sector.*
3. How have ADF investments leveraged other resources? *The KGWC has received additional funding from KDA, USDA, Hatch funds, and new crop opportunities funding. KDA has also provided personnel resources. USDA funding: \$20,366 and UK New Crops Opportunities Center \$25,000.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Project consultants have encouraged and supported grape growers and wine makers to become leaders in their own grape and wine councils as well as within their own businesses.*

Organization: Green River Produce Marketing Association

Project Title:

Award: Forgivable loans \$1,238,446 (\$994,543 used), 2001–2005

Description: Green River Produce Marketing Association is a non-profit farmer cooperative established in 1998 to process, package and sell fresh produce for its farm members. Previous to the co-ops incorporation a group of farmers in Hart County KY jointly cooperated to grow produce and ship it to Cumberland Farm Products in Wayne County. After incorporating as a cooperative the group received approximately \$478,000 in grant funds from the Kentucky Department of Agriculture to establish a facility to wash, grade, pack, cool, and market members produce.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Put in place the building and equipment expansion needed to increase the volume of produce handled (100 acres of melons, plus smaller acres of 6 other vegetables). *Accomplished over time.*
2. Pay off 2004 operating losses and \$22,582 line of credit with local bank. Use remaining 49,510 to begin operations in 2005 (March 2005 application).
3. Expand the co-op acreage of vegetables to an economically viable level of 450 acres of melons, 150 acres of pumpkins and 65 acres of cabbage by 2006. *Not accomplished. Co-op upgraded their equipment and facilities to handle volume but member losses from two bad years hurt the co-op acreage. Co-op did not open in 2006 due to insufficient funds.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *There would be fewer farms in the central part of Kentucky that grow produce commercially. Out of the 14 co-op members active in 2005, 10 continue to grow produce commercially. These 10 farmers grew 120 acres of produce in 2007. The trend has been from growing high volume but receiving lower prices at the co-op, to growing less volume but receiving higher prices by utilizing farmers markets, roadside markets, produce auctions and direct sales to grocery stores.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Total produce sales from 2000–2005 = \$1,579,172. Co-op members received \$944,270 in additional farm income.*
3. How have ADF investments leveraged other resources? *Cooperative Extension support, Horticulture Council funded position, vegetable variety trials and on-farm demonstrations, KY Dept of Agriculture marketing assistance, line of credit from a local bank.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Board member experience.*

Organization: In-Town Winery, LLC

Project Title: Winery Expansion and Upgrade

Award: Forgivable loan \$294,509, November 2003

Description: In-Town Winery, LLC (ITW) is a privately owned business that was started by Mr. Leonard Olson. Mr. Olson had extensive previous experience in the Michigan wine industry. An application was submitted to the ADB in April of 2003. A \$294,509 ADF forgivable loan was subsequently awarded in November of 2003. The purpose of the loan was to purchase wine making and grape processing equipment for a new winery. In-Town Winery was started and is now doing business as River Bend Winery. It is a state licensed small winery that is located in downtown Louisville. The winery is open to the public three nights per week offering a bar/restaurant atmosphere and a "brew pub theme with views of the winery tanks, pumps, and facilities.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Purchase wine making and grape handling equipment to equip a new winery. *Accomplished.*
2. Continue operations during the ten year loan period and provide grape processing to Kentucky producers on a non-discriminatory basis. *No mention of custom processing services offered.*
3. Purchase Kentucky grown wine grapes and receive dollar for dollar loan forgiveness with a minimum of \$29,450 annually for ten years. *Mr. Olson stated RBW has purchased approximately \$115,000 of wine grapes annually from 2005–2007. Ninety-eight percent of the grapes purchased were from Kentucky. \$83,087 of forgiveness achieved by 2004. This is above the minimum purchase amount required annually.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *There would be one less market for Kentucky grown wine grapes.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *105–110 tons of KY grown wine grapes purchased in 2006. Approximately \$115,000 of KY wine grapes purchased from 7–8 KY farms annually for the last three years.*
3. How have ADF investments leveraged other resources? *Leverage of approximately 4 to 1 with \$1.2 M dollars of private funds invested.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Organization: Johns Custom Meats

Project Title: Johns Custom Meats

Award: Forgivable loan \$244,500, October 2005

Description: Johns Custom Meats is a privately owned (S-Corp.) business owned by Mr. John Rediess in Smiths Grove, Kentucky. They custom processes beef, pork, lamb and goats for local farmers as well as deer for hunters and beef from Mr. Rediess farm. Mr. Rediess has been in the meat processing business for years. He operated a smaller processing facility in the area for 17 years. Mr. Rediess sons wanted to participate in the business as well. They decided to expand the business by building a new facility that would allow them to meet USDA inspection standards and handle more volume. In December of 2004 they submitted an application for ADF cost-share money.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Build a new custom and USDA inspected slaughter facility for beef, pork, rabbit, lamb and goat. Increase their current processing capacity from two beef per day to five beef per day (1,500 per year). *Accomplished.*
2. Provide a 10% discount for processing services to Kentucky tobacco dependant producers selling direct to consumers. *At the time of the interview they were still finishing up the construction of their new facility and not fully operational. They had processed meat for two different farmers. In time they expect to have between 200–300 farm customers. They expect continued patronage from their previous customer base as well as acquiring some new customers. They will provide a discount if farm customers can show proof of past or present tobacco payments.*
3. Provide a 10% discount for the refrigerated storage of meat for Kentucky tobacco dependant producers selling direct to consumers. *Same answer as question 2*
4. Provide a 10% discount for refrigerated transportation services for Kentucky tobacco dependant producers selling direct to consumers. *Same answer as question 2*
5. Pay back the forgivable loan over the course of a ten year term with forgiveness granted each year according to the amount of discounts granted to farm customers. *plans to carry this out.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *There would be less processing capacity for locally raised meats without this project being funded from the ADF. This facility should be able to provide consumers with fresh local meats and farmers a way to get their animals "consumer sales ready in order for them to sell direct to consumers.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *A new and larger processing facility has been built which increases JCMs capacity by three head of beef per day. Potentially the increase in processing*

- capacity if fully utilized would result in 900 more beef slaughtered in Kentucky. These 900 beef, if direct marketed and conservatively valued at \$185 of net farm income would amount to a \$166,500 dollar increase in farm income annually.
3. How have ADF investments leveraged other resources? *Bank loan of \$250,000 to add to the ADF funds in order to build the facility. Also seeking a loan through the KY Ag. Finance Corporation.*
 4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Organization: University of Kentucky Research Foundation

Project Title: Kentucky Agricultural Leadership Program (KALP)

Award: Grant \$146,360.00, November 2006

Description: The focus of KALP is to identify, develop and motivate men and women for effective leadership in agricultural and rural communities at all levels of public service. The history of this project began about a decade ago when Philip Morris funded the KALP classes. A few years ago, after funding seven classes, Philip Morris ended funding (200 people had already been through). Those involved in the program searched for funding during the transition time and looked to the Agricultural Development Board for half the cost. After receiving ADB funding, the program set guidelines and leveraged additional funds. The program costs \$14,000 per participant and lasts 18 months with ten 2-day seminars and a trip to Washington DC.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Continue a statewide agricultural leadership program for 20 agriculturalists. *accomplished*
2. At least 16 of the participants must be tobacco dependent and represent a cross section of Kentucky agriculture. *accomplished*
3. Hold ten 2-day domestic seminars (two seminars where spouses are invited) and a five day travel seminar to Washington DC. *Had held three seminars at the time of the interview but plan to hold the rest by the time the 18 months is up.*
4. Keep a record of participant responses from a quantitative evaluation for each topic area as well as the questionnaire from each seminar regarding the relevance and usefulness of the session. *Has done so for the first three seminars and will continue to do so.*
5. Must collect \$1,500 from each producer who participates in the program. *accomplished*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *The 20 participants would not have the opportunity to gain a vast array of knowledge applicable to Kentucky agricultural, entrepreneurial, and public service leadership.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *One current participant just started a new business and one is about to. Many young farmers are involved (21-46). The 20 participants represent 14 Kentucky counties. 18 participants are tobacco-dependent.*
3. How have ADF investments leveraged other resources? *Alumni gave \$30,000, Philip Morris gave \$50,000, the UK College of Agriculture gave \$90,000, and the current class of 20 participants also paid \$1,500 each (totaling \$30,000).*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *One of the end goals of the program is that many of the participants will become leaders in their counties and in entrepreneurship. Several of the seminars focus on these leadership skills and opportunities.*

Organization: Katelyns Honey, Inc

Project Title: Kentucky Harvest Kitchen

Award: Forgivable loan \$288,850, June 2006

Description: Katelyns Honey, Inc. (KH) is a small privately owned food processing company started by Mr. Millard Long. Katelyns Honey was incorporated in 1995 as an S-Corporation. They originally concentrated on making honey. In a very dry year when honey was low Mr. Long started making salsa. He has been in the food processing industry for 25 years. In his experience, it is better to make product for other companies under their brand/label than to try to build his own brand identity. Katelyns honey is currently manufacturing shelf ready foods made from KY produce such as salsa, jams, jellies, tomato sauces and apple butter. KH sells to retail and food service businesses such as Wal-Mart with their private label products tailored to specific regions of the state.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. ADF funds will be used to purchase equipment and make building improvements as outlined in the proposal. *Accomplished. Business is up and running.*
2. Funds awarded as a forgivable loan will be forgiven based on the amount of products purchased from tobacco dependant producers at a rate of 20 cents for each pound of product purchased. *The drought of 2007 has limited the amount of KY produce available, however they did purchase from 24 different KY farms, and 25-30,000 lbs of produce as of September 25th. Currently they are making products for 12 different private label farm customers.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *There would be three less full-time manufacturing jobs and 24 farms with less produce marketing opportunities, plus 12 farms looking some where else to get shelf stable foods made under their label.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *KH expected to sell approximately \$500,000 of value-added products this year all made from KY ag products, KH has purchased produce from 24 different KY farms (25-30,000 lbs of produce) and currently is making products for 12 different private label customers.*
3. How have ADF investments leveraged other resources? *Bank loan of \$150,000 plus investment money from the owner of the business.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *No effect on county leadership. Mr. Long makes a point of sharing with other agriculture businesses how he uses computers in his business for private label printing and financial management.*

Organization: The Kentucky Center for Agriculture and Rural Development (KCARD)

Project Title: Center for Cooperative Development and Business Assistance

Award: Grants: \$400,000 August 2001, \$449,735 November 2003, \$400,725 April 2006

Description: 2001 inception of KCARD (originally created to help cooperative development). KCARD's purpose is to provide business and technical support across the state of KY (one-on-one assistance at individual businesses). The Board of Directors formed this non-profit org. Larry Snell has been executive director since 2002. The ADB funds 50% of KCARD annual operating budget and the USDA rural business services funds 50% of KCARD annual budget. Initially KCARD was not allowed to assist businesses that were not cooperatives. About a year and half ago this changed and they are now assisting businesses that are privately owned and have a majority of the ownership by farmers.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Provide technical, business, and educational services for emerging and existing Kentucky cooperatives. *accomplished per grant, work is on-going*
2. Provide leadership, educational, technical, and financial resources for groups and organizations seeking to enhance opportunities through cooperatives. *accomplished per grant, work is on-going*
3. Foster business success and growth by developing and delivering technical assistance and by providing educational opportunities for agriculture and rural businesses seeking to enhance their economic opportunities in and around the Commonwealth of Kentucky. *accomplished per grant, work is on-going*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *Many of the co-ops would have dissolved much faster without any help from KCARD. Many businesses that are currently successfully operating owe some of their success to assistance from KCARD.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *10 jobs have been created and 155 have been saved at the groups/cooperatives KCARD assists. 55 groups/cooperatives have been assisted. KCARD works with the APES program which reaches approx. 125 youth per year throughout the state.*
3. How have ADF investments leveraged other resources? *Because ADF investments fund 50% of KCARD annual budget, they were able to leverage the other 50% from the USDA. KCARD also helps individual businesses seek out loans and grants. For example: through KPAA (KY Produce and Aquaculture Alliance) activities (KPAA was housed at KCARD but was a separate entity), KCARD helped farmers seek loans.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Through assistance and encouragement from KCARD, many of the businessmen and women they work with have become board of directors and managers in their communities and in their businesses.*

Organization: Kentucky Community and Technical College System

Project Title: Computer Training for Farmers 1 & 2 and Welding Training

Award: \$1,155,000 total - 2004, 2005, and 2006

Description: To teach farmers how to effectively use computer technology to keep financial records, keep inventory and livestock records, use the Internet for research and marketing, communicate through email and other general computer functions, and to be trained in welding.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Train 400 farmers or spouses in basic computer skills that directly relate to farming operation.
2. Teach 200 farmers or spouses how to keep financial records on the computer using recordkeeping software (including Quicken, QuickBooks, and Money Manager).
3. Provide 300-800 farm families with computer hardware and software.
4. Train 300 farmers in basic MIG welding and 84 farmers in advanced MIG welding techniques and provide course participants needed welding equipment and preventative maintenance tools (i.e. welding helmet, gloves, safety glasses, MIG welder, battery operated grease gun and other tools).

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *KY would probably not be ranked 46th in the nation in computer use.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Trained 197 people in 2004, 267 in 2005, and 434 in 2006. Farmers are in a better position to keep records and use the Internet. Provided low cost computers and welding education/equipment.*
3. How have ADF investments leveraged other resources? *In-kind match from KCTCS and \$70,000 from Commodity Growers Co-op.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Computer record keeping may encourage entrepreneurship.*

Organization: Kentucky Department of Agriculture: Agricultural Marketing

Project Title: Agricultural Marketing and Marketing and Promotion

Award: Grants \$5,328,300, July 2003 and August 2006

Description: The Kentucky Department of Agriculture's Agricultural marketing program has five components: Kentucky Proud (which is the largest part), Kentucky Restaurant Rewards Program, Tradeshows, Infrastructure Development, and International Marketing. Allied Food Marketers, the Governor's Office of Agricultural Policy, and the Kentucky Department of Agriculture (KDA) are making a joint effort with this marketing program. The main focus of this marketing program is to promote the KY Proud brand identity, build networks with retail stores, advertise KY products, help producers make their products retail friendly, get products on store shelves, and gain producer, restaurant, and retail participants.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Assist Kentucky producers and companies to promote and market products and companies through cooperative advertising assistance and program cost share assistance. All funds shall be matched with a minimum of 50%. *Accomplished and continuing.*
2. Initiate a marketing program to promote and campaign for consumer awareness of Kentucky Proud products. *Accomplished and continuing.*
3. Implement programs aimed at educating Kentucky food companies and direct agriculture marketers on best marketing practices. *Accomplished and continuing. KDA offers assistance with product label development, UPC codes, nutritional and shelf-life analysis, media kits and customer promo items via cost-share.*
4. Funds will be used for the Kentucky Proud branding, Restaurant Rewards Program, Tradeshows, Point of Purchase Materials, and International Marketing. *Accomplished and continuing. KDA receives no ADF funds for salaries, travel expenses or overhead expenses.*
5. Develop a state of Kentucky Agri-tourism website. *Will be accomplished very soon.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments?
2. What have been the quantitative and qualitative impacts of ADF expenditures?
3. How have ADF investments leveraged other resources?
4. How have ADF programs affected county leadership and entrepreneurial leadership?

Organization: Kentucky Dairy Development Council (KDDC)

Project Title: Infrastructure Development, Technical Assistance Programs, and A comprehensive market study of KY's dairy industry

Award: Grants \$2,450,170 March 2005, July 2006, December 2006

Description: During a KDA summit, it was decided that KDDC should be created and 1.5 years later it formed in April 2005. Mr. Roger Thomas was hired as the Executive Director on August 15th 2005. KDDC is a non-profit organization that was formed to give the KY dairy industry a unified voice. The purposes of KDDC includes: educate KY producers on federal milk marketing order issues, improved milk production techniques, and be a resource to help individual dairy operations improve net farm income. This will also benefit infrastructure and allied industry firms. Approximately 1,100 dairy farms are currently operating in the state.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Establish the KDDC and hire an executive director. *accomplished*
2. Establish three technical assistance programs (detailed above). *accomplished*
3. Contract with Daniel Smith, Esq. to: provide a benchmark analysis for intrastate, interstate, and federal initiatives to enhance the long-term sustainability of the Kentucky dairy industry; to provide the basis of a long term strategy to sustain the capacity of the Kentucky dairy industry to supply the fluid demands of the Kentucky market place; and to present a series of industry and government actions and programs, both intrastate and regional, that may be taken to enhance performance and profitability of the Kentucky dairy industry. *in progress*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *The state's dairy industry would not have an organization designed solely to enhance the industry's viability. The KY dairy industry would have less access to modern dairy production information, less incentive to make efficiency changes and less understanding of their "fit within the industry."*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *41 new dairy farms participating. 26 young dairy producers participated in KDDC initiative in 2007 to receive educational and entrepreneurial guidance as well as networking opportunities. Increase dairy farm participation in the KY State fair dairy recognition dinner, in 2006 15 producers received awards for high production (RHA) and 3 producers won state quality awards. 1,125 people have attended the KDDC / ALLTECH Barn Meetings focused on milk production, quality, price and marketing issues, about 50-60% of those attending are dairy farmers. Through the incentive program, 76 producers are improving the quality of their products, increasing production, and keeping better records to in turn receive financial compensation, as of July 30, 2007 \$140,000 has been awarded in the first round of quarterly incentive payments to producers. KDDC consultants are helping dairymen around the state improve efficiency, quality, and production. Youth are being educated through KY KATE program, which KDDC financially supports. KDDC estimates 125,000 people see KY Kate at events through out the year, most of these appearances are at the state fair and other county level fairs.*
3. How have ADF investments leveraged other resources? *Two allied market organizations gave money to wave registration fees for dairymen participating in KDDC programs. Also received market incentive cost- dollars (max. \$500,000 per year for 2 years) from various marketing agencies.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Young dairymen participating in KDDC initiative are beginning to take on more leadership roles in their communities as well as expand their business endeavors. Young dairymen have been given networking opportunities as well as opportunities to learn from successful dairymen both in and out of state.*

Organization: Kentucky Wood Products Competitiveness Corporation

Project Title: KentuckyVirtual.com

Award: Grant \$250,000, August 2001

Description: Kentucky Wood Products Competitiveness Corporation (KWPPCC) was created by the Kentucky Legislature for the purpose of establishing a de jure municipal corporation and political subdivision of the Commonwealth on KY to promote enhance and develop the secondary wood products industry within the state. KWPPCC as such created a website: www.woodproductsmall.com in March of 2000 to sell KY wood products. The e-commerce website seemed to offer promise to other sectors of the Kentucky economy as well. KWPPCC networked with other state agencies to formulate a proposal to start a "virtual store for all sorts of KY made goods including food and craft items.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Initial \$250,000 grant given for the purpose of marketing and promoting www.kyvirtual.com. *Money was awarded, site was advertised. Problems ensued with consultant services payments.*
2. Additional funding of \$250,000 contingent on adding at least 50 new agricultural product vendors to the site. *Not accomplished. No additional ADF funds spent. Website business dissolved.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *No difference. This project had no impact.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *No impact.*
3. How have ADF investments leveraged other resources? *There was supposed to be a dollar for dollar in-kind match of \$250,000.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *No effect.*

Organization: Knotwood Craftsmen Investments Corporation, Inc.

Project Title: High-tech Woodworking Facility and Woodworking School

Award: Forgivable loan \$597,000, September 2005

Description: Knotwood Craftsmen Investments, Inc (KWC) is a sub-chapter S corporation that is privately owned. ADF money was awarded to KWC in the form of a forgivable loan. The ADF funds were provided to pay 50% of the cost to build and equip a modern woodworking facility, wood working school, air drying sheds and lumber kilns in Jackson County Kentucky. KWC is currently in the process of building and equipping their facility. When fully operational KWC proposes to purchase timber from area farmers to be sawn into dimensional lumber on site then either sold to the farmer at a discount or transported back to their facility for processing into value-added wood products.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Provide a 10% discount to tobacco dependant producers on all sawing, drying, and milling services. The loan is forgiven on a dollar for dollar basis. *KWC is in the process of installing the wood working equipment into their facility and getting their equipment operational.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *S.E. tobacco farmers would have one less market for their timber and less access to discounted rough lumber, custom sawing and drying services*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *KWC is still in the pre-production phase of their project. They have sawed some timber for 12 different farms but their wood products manufacturing facility is not operational yet. Since the interview, Knotwood Craftsmen Investment Corp. has ceased operations.*
3. How have ADF investments leveraged other resources? *Investor/owners have matched the ADF funds with personal funds.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Organization: Kentucky State University Land Grant Program

Project Title: Honeybee Pollination Services

Award: Grant \$292,750 February 2002

Description: Kentucky State University (KSU) is an 1890 land grant university with a strong tradition of research and extension focused on small farms. This project started with a proposal to the ADB in August of 2001. The proposal was written by KSU Apiculture Extension Specialist Dr. Tom Webster with the support of bee keepers and others throughout the state. Grant awarded for the purpose of increasing bee keeper profitability by educating producers on bee keeping practices, promoting paid bee pollination services and providing access to honey extraction facilities for honey producers. A project manager was hired in May of 2003.

Goals stated in terms sheet: (Evaluation Team comments in italics)

Support KY beekeepers by:

1. Make available trailers to transport hives to crop fields for pollination. *Nine trailers for hive transport were purchased and leased for producer use.*
2. Make honey extraction units available to bee keepers in KY so that they can process their honey for retail or wholesale sales. *Twelve extraction units were designed, built and placed at convenient locations throughout the state.*
3. Educate beekeepers and others on beekeeping and crop pollination. *Beekeeping presentations were given, a comprehensive beekeeping manual written, and a CD about beekeeping is due out soon.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *New and existing beekeepers would have less access to expensive processing equipment to extract their honey. Without the trailers purchased with this project, KY beekeepers would have less incentive to try crop pollination services as an income generating enterprise. Produce and other crop farmers have the potential to hire bee pollination services for their crops.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Twelve honey extraction sites that processed 71,417 lbs of honey. If sold retail an estimated \$3.50 / lb could be cleared after expenses. Best case scenario: \$249,959 dollars of net farm income generated.*
3. How have ADF investments leveraged other resources? *KSU matching funds (salaries)*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *The twelve honey extraction sites are managed by local volunteers. Also there are 20 local beekeeper associations active in KY. The beekeeping associations and the shared honey processing would be conducive to peer entrepreneurial learning and leadership.*

Organization: Kentucky State Beekeepers Association

Project Title: Mite-resistant Honeybee Strain Development

Award: Grant \$100,103, February 2002

Description: Kentucky State Beekeepers Association (KSBA) queen raising project was intended to develop a mite-resistant queen honeybee strain. The end goal of the project is to develop a queen honeybee strain that can withstand and thrive in the Kentucky environmental conditions. KSBA has been working on stabilizing several honeybee colonies where the queen survives for several seasons. Once they have reached their desired number of surviving colonies and queens that can thrive in Kentucky environmental conditions, they will begin artificial insemination of the bees to increase the Kentucky honeybee population. Kentucky farmers benefit from honeybees through their pollination that increases their crop yields.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Research and develop a Kentucky adapted honeybee queen population and breeding stock to be used for artificial insemination. *accomplishing*
2. Increase honey yields and improve pollination of farmers crops. *accomplished*
3. Educate beginning to advanced Kentucky beekeepers on honeybee queen breeding techniques. *accomplished*
4. Purchase beekeeping equipment to be given to beekeepers for training. *accomplished*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *Several individuals would not have had the opportunity to enter the honeybee business. Honey yields as well as crop pollination benefits would be less.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Expanded beekeeping in Kentucky. Developing a Kentucky honeybee queen population and breeding stock. 4 businesses producing queens with 1,000+ sold annually. 10 Kentucky beekeepers were given education and training in beekeeping. 4 youth were given education and training in beekeeping. Several part-time farmers have been able to diversify by beekeeping.*
3. How have ADF investments leveraged other resources? *The ADF investments have not helped the KSBA leverage any additional money to date.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *This ADF funded project has not affected county leadership to date but it has increased entrepreneurship for the four beekeepers now in business selling queen honeybees.*

Organization: Kentucky Thoroughbred Owners and Breeders

Project Title: MRLS Research I and II

Award: Grants \$501,200, November 2001 and March 2003

Description: Kentucky Thoroughbred Owners and Breeders worked with Dr. Jimmy Henning at the University of Kentucky to develop a contingency and monitoring plan to prevent future losses to Kentucky horse farms from Mare Reproductive Loss Syndrome (MRLS). The first grant confirmed that the eastern tent caterpillar (ETC) is the cause of early and late fetal losses in pregnant mares. Additionally, high levels of alkaloids associated with endophyte infected tall fescue were identified as a cause of losses as well. Data from 12 horse farms from Bourbon, Fayette, Jessamine, Scott, and Woodford counties was collected and analyzed.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Estimate number of viable ETC egg masses and monitor egg hatching and ETC migration. Monitor farms for alkaloids in tall fescue and relate that to fetal status.
2. Use rapid response approach to address MRLS cases that occur and document the appropriate farm and field data for correlation. Collect blood and urine samples from select populations of horses for future correlations to MRLS or reproductive problems.
3. Minimize or eliminate exposure of pregnant mares to the ETC. Keep pregnant horses out of proximity to wild cherry trees.
4. Reduce exposure of pregnant mares to endophyte infected tall fescue. Collect farm data, monitor farm and animal conditions.

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *There was no money in the foundation at the time the ADF money was awarded. They now have a research foundation with a reserve fund for critical reproductive research available as needed. Researching MRLS and identifying successful strategies to limit future problems with MRLS has been essential to maintain Kentucky as a viable market for breeding, raising, and selling thoroughbred horses.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *The award was used for 15-20% personnel costs and 80-85% operating costs. Of the 500 commercial breeding operations in Central Kentucky (estimated annual sales are \$750 million), 80-90% are also tobacco farmers. There were five tobacco-impacted counties affected by the project including Fayette, Woodford, Bourbon, Scott, and Jessamine counties. This project contributed to marketing and market development by successfully addressing the problem of MRLS thereby making Kentucky once again a premier place to raise and bred horses.*
3. How have ADF investments leveraged other resources? *Industry donations were received that increased the fund to \$1.3 million (\$700,000 has been spent on MRLS research).*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *This project has not affected county or entrepreneurial leadership.*

Organization: Kentucky Beef Network, LLC

Project Title: KBN-1, KBN-2, KBN-3, KBN-Market Development Fund

Award: Total \$8,545,863 June 2001, July 2003, September 2005, August 2003

Description: Kentucky Beef Network is a non-profit, limited liability company with the following mission statement: "The purpose of the Kentucky Beef Network, LLC (KBN) is to create an ongoing, integrated network of beef producers who are fully and equally trained to produce a consistently recognized total quality product at a reasonable and sustainable profit. The Kentucky Cattlemen's Association is the sole member of KBN. The KBN was started in 2001 with an initial grant from the Agricultural Development Board in June of 2001. After six years and three rounds of organizational funding, the KBN has evolved in its activities and its focus. Originally the KBN took a broad approach to hire 20 facilitators to work one-on-one with KY cattle producers. The needs of KY cattlemen were discovered from the grass-roots with marketing identified as the number one priority. Certified Pre-conditioned for Health (CPH-45) sales of feeder cattle was targeted as a sales venue offering particular promise. After identifying those KY cattlemen had difficulty putting together 50,000 pound semi-truck load lots of like calves, KBN initiated three custom weaning and backgrounding centers. After two years of trying KBN determined that

custom weaning operations did not always yield a profit for participating farmers and that this activity was best left in the private sector.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Hire area beef facilitators to work with KY cattlemen. *Initially hired 20, now down to 10 facilitators and focused more on education, data management and market promotion.*
2. Promotion of CPH-45 sales of KY calves. *CPH-45 feeder calf sales numbers have increased approximately 516% since 2000, from 5,396 calves sold in 2000 to 33,241 calves sold in 2006. KBN estimates producers average \$40.95 per head net return by selling through the CPH sales. KBN estimates producers receive an extra \$1.35 million dollars annually from CPH sales. KBN provides grading assistance for KY farmers to use CPH-45 sales since 2001.*
3. Establish custom calf weaning and backgrounding centers. *5 established in 2001–2002, discontinued after 2002 due to more risks than rewards. Establish a Market Development Fund of \$2 million dollars to provide technical assistance and cost-share for upgrades to KY livestock markets and collection points, thereby facilitating individual animal source verification, internet livestock sales, and carcass evaluation of feeder cattle. 40 markets have applied for funding, 21 livestock markets have completed system updates to make them electronic animal ID ready in order to provide source verification information and market participation. Producer cost-share program of \$6 per head for electronic ID of cattle and the acquisition of carcass data from 3rd parties. 82 farms have applied for tag cost-share on 8,900 hd of cattle.*
4. Provide producers with direct information of their cattle performance in the feedlot through the Value-added Targeted Marketing Program (VATM). *8,000 animals tracked with carcass data returned to the farmer, KY beef cattle yield grades have been improving over time, in 2006 KY cattle grading choice or prime exceeded the national average by 7%, some problems noted with over fat KY cattle as well.*
5. Fund Master Cattlemen and Master Grazer training programs for KY Cattle producers. *Since 2000, 3,072 beef producers from 115 KY counties have participated in the Master Cattlemens Program, 20 multi-county beef producer groups have participated in the Advanced Master Cattlemens program and 600 producers from 91 KY Counties have participated in the Master Grazers Program.*
6. Conduct on farm demonstrations of efficient production systems. Promote, teach and cost-share producer usage of cattle performance record keeping with the CHAPS program. Certify KY Cattle into the Beef Quality Assurance program (BQA). *20 demonstration farms involved in the Master Grazer Program with most reporting a 50% decrease in hay usage due to extended grazing season. 400 beef producers have purchased the program and 100 have their cattle herd data custom processed. 11,000 cattlemen have now been BQA certified in order to reduce off quality problems associated with poor management techniques.*
7. KBN Data Management and Verification Services. *60,000 hd of KY cattle PVP certified (Process Verified Program) with KBN estimated average premium of \$12 / hd = \$720,000 in additional Net farm Income, annually, also 14,000 animals from 200 herds with data in the system for production management records, also carcass data entered for 65,000 animals in over 1,000 herds for improvement analysis.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *There would be less improvement in Kentuckys beef cattle or in Kentuckys cattle marketing systems than there is today. Kentuckys reputation for quality cattle has been greatly improved due to better educated producers providing better cattle management and genetics. In addition KY beef producers would have fewer opportunities to market their cattle to premium markets such as pre-conditioned for health, graded sales or the sale of Process Verified Cattle (PVP).*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *\$720,000 estimated in additional annual net farm income from the sale of PVP animals. \$1.35 million in additional annual net farm income from CPH-45 sales. Quality improvements of KY cattle due to better data collection and analysis. Electronic animal ID capable livestock marketing facilities will give the KY beef industry a marketing advantage as more production information will be required from producers in the future.*
3. How have ADF investments leveraged other resources? *Cost-share programs with beef producers for electronic animal ID, livestock marketing facilities for EID reading equipment and internet marketing capability, as well as genetics and production data collection, and educational programs have leveraged additional investment from KY beef producers and livestock markets.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *The KBN has sponsored several educational programs such as Master cattlemens Program, etc which have probably assisted entrepreneurs in beef production, KBN also has local chapters which foster local leadership within the beef industry.*

Organization: Kentucky Forage and Grasslands Council Project Title: ADF

Project Title: Profitable Forage/Livestock systems for Northeastern Kentucky

Award: Grant \$362,561, November 2003

Description: The Kentucky Forage and Grasslands Council is a 501-C3 non-profit producers association that exists to educate farmers and promote forage crops and grazing management. KFGC with the help of Dr. Michael Collins at the University of Kentucky applied for ADF funds to hire a hay marketing specialist and a goat forage research assistant. They were approved for a \$362,561 ADF grant covering a two year period. Both positions were filled and the plan of work as outlined in the grant application was carried out. The grant agreement was for a two year period. As of July 31, 2007 the project reported being

75% completed. Both the hay marketing specialist and the goat forage research person were hired as University of Kentucky employees. Both continue to work in their respective areas of interest at UK and are now paid from other funds.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Fund hay marketing specialist position to educate Kentucky forage producers on hay production and marketing, conduct research trials and organize four conferences that focus directly on cash hay production and marketing. *Accomplished. The hay marketing person is still employed. 2000 farmers and ext agents in 36 counties benefited from hay field days, conferences and producer trips to see successful hay production in other states.*
2. Bring Kentucky hay producers and buyers together to increase the market opportunities for KY hay. *Helped establish 2 new hay classifications to address specific markets; certified organic hay and certified weed free hay or straw. Worked with the Buffalo Trace Auction to establish a hay marketing venue. The hay auction did not work out as planned as buyers and sellers would bypass the auction in favor of private sales.*
3. Fund a goat research position at UK to conduct goat forage research and educational activities for a two year period. *Accomplished, person is still employed. Approximately 1,000 farmers in 19 counties were provided goat forage information through county field days, goat producer meetings, farm visits, farm tours and telephone calls. Goat forage research was conducted in 2005-2006 on rotational grazing vs. non-rotational grazing, co-grazing goats with cattle to reduce parasite levels and utilize more forage, a goat forage preference study with 21 different types of forage and a sericea lespedeza establishment study.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *KY farmers in the Northeastern part of the state are better informed about hay enterprise possibilities, production, and marketing.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *2,000 forage producers and 1,000 goat producers were impacted with additional information on forage production, forage quality and marketing. An estimated \$559,000 in additional hay income was generated during the projects operational period of 2004-06 due to better feed usage, better hay production and better hay marketing practices.*
3. How have ADF investments leveraged other resources? *Participants in this educational project emphasized the importance of hay storage structures to preserve hay quality. This emphasis should have resulted in more farmers taking advantage of the hay storage model program cost-share funds offered through the county councils.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *No effect.*

Organization: Kentucky Highlands Investment Corporation

Project Title: Agriculture Micro Enterprise Development

Award: Grant \$158,750– May 2002

Description: KY Highlands Investment Corporation (KHI) is a non-profit 501-C 4 corporation whose purpose is to access capital for business and economic development with in a 22 county economically disadvantaged area of Kentucky. KHI had some experience with offering small zero interest agricultural diversification loans to area farmers. Based on a perceived need KHI applied for a \$600,000 ten year SBA loan to begin a small lending program for farmers impacted by the loss of tobacco income. In May of 2002 the Agriculture development board awarded KHI a \$158,750 grant. The ADF grant was used to establish a \$90,000 reserve loss fund as required by the SBA loan and use the remaining \$68,750 to provide technical assistance to loan applicants.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Use the ADF funds to establish a \$90,000 loan loss reserve fund to leverage a \$600,000 SBA 10 year loan for a micro agriculture enterprise development low interest loan program. *Accomplished and all funds currently loaned to 25 agriculture businesses at a reduced interest rate of 3.75%.*
2. Use \$68,750 in ADF funds to provide technical assistance to agriculture borrowers and potential borrowers. *Accomplished with 58 businesses receiving individual business consulting resulting in 25 loans being made.*
3. Make loans available to any farmer within the 12 county KHI service area. *Accomplished with Cooperative Extension Agents and local banks promoting the program to area farmers. Resulting in 58 applications and 25 loans made to farmers and agribusinesses in 8 counties.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *There would be \$600,000 less operating or investment capital at work in the agriculture industry within the KHI service area.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *The KHI 12 county service area is generally economically disadvantaged with high unemployment and little outside investment in new businesses. The ADF money allowed KHI to leverage \$758,750 additional money (\$600,000 SBS and \$158,750 U.S. Treasury match to ADF funds) to carry out a micro loan program offering low interest rates and technical assistance for agriculture business development. 25 loans were made; 3 to agri-businesses and the remainder to farmers.*
3. How have ADF investments leveraged other resources? *ADF funds were leveraged almost 5/1, an additional \$758,750 was added to the ADF money for the loan program and technical assistance.*

4. How have ADF programs affected county leadership and entrepreneurial leadership? *Technical assistance was provided to 58 loan applicants to help with business and financial planning, all of which is supporting entrepreneurship.*

Organization: KY Horticulture Council

Project Title: Infrastructure Support for the Growth of Kentuckys Horticulture Industry

Award: Grants \$8,685,671—September 2001, August 2003, December 2005, October 2006

Description: The Kentucky Horticulture Council (KHC) is a non-profit organization composed of 13 horticulture producer and industry organizations in Kentucky. The purpose of the council is to allow the members to focus on common issues, promote KY horticulture and organize support for the horticulture industry in Kentucky. The KHC prepared a long term plan to grow the horticulture industry in Kentucky titled "Horticultural Opportunities: A Prospectus for Kentuckys Horticultural Industries in Sept. 2000. Based on this plan the KHC submitted a proposal to the ADB to fund activities and personnel needed to advance the nursery, greenhouse and produce sectors of Kentuckys horticulture industry. Beginning in 2002 the KHC has received grant funding from the ADF to start and then continue an on-going effort to advance the horticulture industry by providing research, extension consulting and education, market development and market promotions.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Variety Trials and Production System Research. *An additional 12-15 research trials per year on critical production / marketing system issues (approx. 70 total). Introduced and perfected the pot in pot nursery tree production system for KY growers.*
2. On farm Demonstrations and Consulting. *175 on farm demonstrations, 55 on farm research trials, 80 field days, 3,200+ farm consulting visits. Employed up to 9 Extension Associates for Horticulture to work directly with new and existing horticulture producers of vegetables, small fruits, greenhouse and nursery crops.*
3. Market Assistance and Promotion. *150+ horticulture producers utilized \$209,000 in ADF money in the advertising cost-share program and matched it with \$300,000+ of producers cash to promote their KY grown horticulture products. 100 horticulture producers using market development cost-share funds to promote their products at tradeshows resulting in a 100% increase in sales to high value northern markets.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Less tobacco growers adding horticulture crops to their farm operations.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *10-13% sales increase for horticulture producers using advertising cost-share. 100% increase in nursery sales to northern markets. Indirect effects: 47% increase in KY farm horticulture cash receipts 2000-2006. Composed of: 53% increase in floriculture cash receipts, 70% increase in produce cash receipts, 30% increase in nursery, greenhouse and sod cash receipts.*
3. How have ADF investments leveraged other resources? *UK, KDA, HC Member Organizations and KY Horticulture producers matched the ADF money 100% (mostly in-kind). Every \$1 in ADF on farm demonstration money was matched with \$3 from a produce farm or \$7 dollars from a nursery grower.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Organization: Kentucky Poultry Federation

Project Title: A Rapid Response to Poultry Disease Threats

Award: Grant \$102,000—December 2006

Description: The Kentucky Poultry Federation (KPF) is a non-profit producers association composed of KY commercial poultry farmers and allied agri-businesses. KPF has approximately 350 KY farm members. KPF was started in 1957 and is affiliated with both a national association of egg producers and a national association of chicken producers. A \$102,000 ADF grant was awarded in Dec 2006. The ADF funds were matched with \$102,000 in industry funds to create a \$204,000 indemnity fund for small backyard poultry producers. The purpose of the indemnity fund is to have a ready source of funds to purchase and destroy any poultry flock that is found to have a serious infectious disease.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. The ADF funds will be matched with private funds already raised by the applicant to establish an indemnification program for non-commercial poultry farmers in Kentucky in the event of an avian disease outbreak. *Accomplished.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Kentuckys commercial poultry industry is more secure due to this ADF grant which provides for a rapid settlement and destruction of diseased poultry in non-commercial flocks.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *See above.*
3. How have ADF investments leveraged other resources? *The poultry industry in Kentucky matched the ADF grant funds dollar for dollar for a 100% leverage of funds.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *No effect.*

Organization: Kentucky Sheep & Wool Producers Association, Inc.

Project Title: Kentucky Sheep & Goat Development Office

Award: Grant \$184,000—September 2006

Description: The Kentucky Sheep and Wool Producers Association (KSWPA) in cooperation the Kentucky Goat Producers Association (KGPA) submitted an application to the ADB in August of 2006. The purpose of the request was to form a jointly owned development office with a full-time paid co-executive director to represent and further the small ruminant industry in Kentucky. Both of these organizations are non-profit producer groups that were being managed by volunteers from their membership. An ADF grant of \$184,000 was awarded in September of 2006 (legal agreement signed April of 2007) to fund the project for a two year period. Approximately 55% of the project expenses are expected to be in personnel costs, 35% in operating costs and 10% in equipment expenditures. The Co-Executive Director will be managed by a nine member oversight committee consisting of executive officers of the KAWPA and the KGPA. The proposal states there were 1,230 sheep farms and 2,979 goat farms in Kentucky in 2002 (2002 Ag. Census). The two non-profit associations have approximately 400 farm members spread throughout the state.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. To give the sheep and goat producers a unified voice. *Begun and on-going. An Executive Director has been hired and an office in Frankfort, KY has been established. The Executive Director has been involved in national sheep and goat industry meetings, the KY Task Force on the Future of Agriculture, the State Agriculture Response Team, the 2007 KY Goat & Sheep Summit, the 2007 annual meetings of the KY sheep and goat producers, newsletters to KY farm members and communications with government and university personnel.*
2. To improve the profitability of the sheep and goat production by educating new and existing producers on production and marketing. *Annual meetings, county and regional producer meetings, Development Office web site and statewide newsletter mailings. The Development Office has had input into a university goat forage research project.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Both sheep and goat industries would be less visible to state agriculture leaders. Sheep and goat farmers would not have a full-time executive director to serve their interests.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Too soon to tell if any impacts have been made.*
3. How have ADF investments leveraged other resources? *Not yet, however additional grants are being sought and a permanent producer check off funding mechanism is being investigated.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Both regional and state goat and sheep livestock shows /sales are being encouraged and promoted by the Development Office.*

Organization: Kentucky Vocational Agriculture Teachers Association

Project Title: Statewide Agriculture Education Curriculum

Award: Grant \$250,000—June 2003

Description: The Kentucky Vocational Agriculture Teachers Association (KVATA) is a non-profit organization representing high school vocational agriculture teachers across the state. In 2002 Mr. Curt Lucas was working as a consultant for Agricultural Education with the KY Dept. of Education. Mr. Lucas recognized that a new KY specific curriculum in agriculture was needed. A curriculum was needed that was aligned with the KY core content requirements and used a non-paper based media for ease of use. The Association applied for ADF grant funds in September of 2002. The purpose of the grant was to contract with an outside vendor to develop and deliver 600 customized agriculture curriculum lessons for KY Vocational Ag Teachers to use state-wide.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Purchase a complete customized agricultural curriculum for use in 142 agricultural programs in Kentuckys public schools. *Done.*
2. Contract with the Center for Agriculture and Environmental Research and Training, Inc. (CAERT) to purchase a 600 lesson library of CD based education curriculum, customized to meet the needs for Kentucky agriculture teachers and students. *Done. CAERT developed and delivered a 1,000 lesson CD based agriculture curriculum.*
3. Require all Kentucky Agriculture Teachers to attend curriculum training sessions which will be offered by CAERT. *Done. Approximately 250 KY agriculture teachers have attended training sessions conducted by CAERT showing how to use of the curriculum and web based resources.*
4. Survey all Kentucky agriculture teachers for their opinion as to the usefulness and frequency of use of the curriculum. *Done. Two teacher surveys were conducted one in 2006 and one in 2007. Copies of a summary report on each were provided at the interview. Overall the teachers comments were very positive about the curriculum and its usefulness.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *KY youth would not have as modern or complete a curriculum in agriculture.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *24,000 KY youth received state of the art agriculture educational lessons. 8,000 of the above youth are from farm backgrounds. 250 KY agriculture teachers can integrate their agriculture curriculum with the schools core content learning requirements.*
3. How have ADF investments leveraged other resources? *The KY Dept. of Education paid \$25,000 for one additional agriculture lesson plan.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Vo-Ag students have the opportunity to do a supervised agriculture project that would involve an entrepreneurial venture.*

Organization: Kentucky West Nursery Cooperative (KWNC)

Project Title: Nursery

Award: Grant and Loan \$4,777,466 Total (\$1,840,784 used)—December 2001

Description: The purpose of the project was to develop, strengthen, and expand a nursery cooperative with assistance in equipment, handling facilities, product marketing, and ownership. Tobacco was a primary source of income for 29 of the members (at time of application there were 33 members). Production of shade and ornamental trees was to compliment tobacco operations in the annual distribution and efficient utilization of farm labor. Members lived in the seven counties of the Purchase Region. Kentucky West Nursery Cooperative (KWNC) expected the number of farm families impacted within a few years to be over 100. Their initial optimism was based on the uncertainty of tobacco program and low corn and soybean prices. Neither condition now exists in Western Kentucky. The nursery business requires a 3-4 year start up period. It was expected to be 4-8 years before the cooperative could be financially successful.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Diversify Kentucky's agricultural base into a non-traditional agricultural enterprise. *Partially accomplished.*
2. Help 33 farmer-growers expand into a new enterprise and build the foundation for future growth and expansion. *Partially accomplished. 5 members bought the name and are now operating as an LLC. Other original WKNC members have continued in the nursery business on their own.*
3. Plant 25,000 trees (25 acres) in 2002 and then add an additional 75,000 trees (75 acres) per year from 2003-2009 for a total of 550 acres. Conduct annual marketing studies to determine numbers of acres and species to plant. Expect to benefit over 100 tobacco farm families initially and many more in 10 years. First harvest fall and winter 2004, expected to generate approximately \$1,650,000. *not accomplished.*
4. Evaluation criteria for KWNC Board of Directors: Acres planted to trees, shrubs, and ornamentals, increased membership, increased net farm income, increased cash flow, return on patronage dividends, marketing and sales agreement for future harvests, return on investments, increased assets, self-sustaining business, increased producer and community education on the cooperative form of business. *Partially accomplished.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *"We would not be in the tree business without the ADF funding. Right now Mr. Paschell has 8,000 trees. There are also 4 other large producers working with him to market their products together.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *New market for KY agricultural products in MI, IL, OH, MO, TN, IN, GA, AL. The co-op lending power helped their new producer members get started in at a much more rapid pace and with less risk than they could have on their own. The co-op provided loans, equipment and educational support for 22 new nursery crop entrepreneurs. Some of the members were part-time farmers. Produced new products—ornamental and deciduous shade trees. Net-farm income increased 30-40% for 11 producers. New Ag research and development -pot-in-pot technology. About 100 new seasonal jobs created. 11-25 farm youth affected. The co-op was dissolved but there are new profitable crops being grown and new markets reached.*
3. How have ADF investments leveraged other resources? *USDA Rural Development grant used for operating expenses and \$642,450 contributed by members.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Farmers in this group had to step into new leadership roles.*

Organization: Lake Cumberland Milling, LLC Project: Award:

Project Title: Soybean Mill

Award: \$1,165,000 forgivable loan—April 2004

Description: Cumberland Valley Milling is a limited liability company that was started by 27 members who purchased stock. Cumberland Valley Milling, LLC proposed to purchase a feed milling facility and build a soybean extrusion processing plant. The plant development is an effort to provide a market to Southern Kentucky grain farmers, and produce soybean meal, soy hulls, and soy oil. Agricultural Development funds were used to construct the soybean-processing mill. The project is an effort to replace income lost to tobacco quota cuts and the grain market demand lost to the out migration of the hog industry. The mill will provide a source for area livestock producers feed rations. Counties impacted include Wayne, Clinton, Cumberland, Pulaski, Rockcastle, and Russell. The business will also purchase some beans in TN and sell soybean meal in TN.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. To develop and sustain a business capable of providing a long term, positive impact on agriculture in southern KY. To replace income lost to tobacco quota cuts for our farm families in southern KY.
2. To provide a marketing opportunity for area soybean producers and increase profits through higher market prices. To supply a higher quality, value added soybean meal for area livestock producers and increase profits through lowered feed costs and better feed efficiency.
3. To create economic stability in these agricultural communities endangered by shifts in the commodity production. To reinvest funds locally in southern KY agriculture, create jobs, and be a responsible corporate citizen by economic development.
4. Evaluation criteria to determine success for the project will include: profitability of the operation, market expansion in tons of product processed and sold, number of bushels of KY soybeans processed, average price per bushel received by producers including premium, total dollars in ag income in KY counties attributable to the milling operation, total savings to soybean and livestock producers by elimination of transportation costs, number of farmers using the marketing and processing facilities, savings to livestock producers from feed discount.

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Would not have happened without award. Bank would lend operating money, but not construction money to add the extruder plant.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Created a local market for soybeans beans, saving 50-60 cents/bu transportation cost on 250,000 bushels in 2006. Paying a higher price to local farmers (about a 40 cent premium). Processing raw soybeans into oil (150,000 gal 1.5 cents below Chicago BoT), meal (3,800 tons \$27 above CBoT), hulls (450,000 lb. \$6.50 per cwt). 3 New Full time jobs. created a soybean market for 700 farmers. Previously, the closest soybean market was in Owensboro or Jeffersonville, Indiana. This mill creates a more local market for soybeans. High fat soybean meal is a new product for this area. CVM has not achieved profitability yet. They only have one customer for their current oil product.*
3. How have ADF investments leveraged other resources? *This was a \$2.4 M dollar project (loan was for\$1.1m). Other funding sources included: county ADF funds \$80,000, \$1.7m in bank loans, KY Highlands loan \$35,000, 27 investors stock purchases.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *27 local investors (some farmers) purchased an existing business and then expanded it to create value-added soybean products.*

Organization: Little KY Smokehouse and Fresh Meal Solutions. LLC

Project Title: Little KY Smokehouse

Award: Forgivable loans \$1,950,000—August 2002, July 2004

Description: Little Kentucky Smokehouse and Fresh Meal Solutions are two different businesses that grew out of Jim David Meats a division of Union County Livestock, Inc. In 1987 Mr. Baird and Mr. Simmons raised hogs on a large scale in Union County KY. In 1991 they purchased a small meat packing facility and created Jim David Meats to process and market local livestock. The business grew and was successful. They had a problem selling the fresh hams from the pork they were processing so they applied for funds to build a ham processing plant. The venture went well with the hams in demand from retailers (Kroger, Wal-mart, Starbucks, Sara Lee, Schlotzskys, Columbus Meats). In 2004 the company applied for and received a \$1,000,000 ADF forgivable loan to start Fresh Meal Solutions (FMS). FMS was started to manufacture fresh cooked microwave ready meals for grocery store case ready sales. They currently serve 1,000 Wal-Mart stores and have plans to add another 2,000 stores in the near future.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Start, build, and operate a smoked ham processing facility. *Accomplished*
2. Pay Kentucky hog producers a premium equal to \$0.05 cents per pound for each pound of raw pork purchased from KY farmers. *Paying off loan ahead of schedule. \$300,000 paid so far out of \$950,000 due over a ten year period.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Two different food processing plants would not have been started in KY. KY raised hogs would have less sales demand. There would be 100 less full-time jobs available in Union County KY. Consumers nation wide would see less KY Proud labeled products. KY producers of naturally raised hogs in the Mid-South Pork Co-op would not have a market for their differentiated pork product.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *1,000,000 hogs have been purchased by Swift Packing Co. in Louisville for hams needed for LKS. KY hog producers received a premium of approximately \$1/per head for their KY raised hogs, approx. 300,000 KY raised hogs purchased per yr X 3.5 years = \$1,050,000. 5,000 naturally raised KY hogs are produced and sold by the Mid South Pork Co-op to LKS each year. LKS pays a premium of \$20 per head directly to the farmers. 5,000 hogs X \$20 X 3.5 years = \$350,000. KY hog farmers have received approximately \$1.4 million dollars in premiums as a result of LKS operations to date.*
3. How have ADF investments leveraged other resources? *Approximately \$1.9 million dollars of additional funds from other sources went into the LKS start-up*

4. How have ADF programs affected county leadership and entrepreneurial leadership? *11 member Mid south pork co-op members have found a steady market for the naturally raised hogs they produce. Currently this is their sole market for their natural hogs.*

Organization: Maysville Community College

Project Title: Welding and Diesel Maintenance Training for farmers

Award: Grant \$124,800—January 2006

Description: Maysville Community College saw a need to offer area farmers welding and diesel engine maintenance courses as a way for area farmers to save money on repair bills and learn a marketable skill (mig welding). Modeled after a similar program offered in Ohio, MCC proposed to offer a series of training courses in the evening at locations in 9 counties across N.E. parts of Kentucky. Eighteen courses were conducted in nine different counties through out the year. A total of 84 farmers completed both the beginning and the advanced level welding course. Farmers were required to pay a \$125 fee to attend the welding courses and received a \$1,375 training value which included a MIG welder for them to keep. Forty-two (42) farmers completed the diesel engine maintenance courses. Farmers were required to pay a \$50 fee to attend the diesel maintenance courses and received a \$550 training value. All of the ADF funds were spent and essentially all of the goals as outlined in the ADF award terms sheet were met in 2006.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Assist approximately 204 tobacco farmers in learning needed skills to safely and effectively build and repair farm equipment using MIG welding and diesel engine preventative maintenance. *71 Farmers took beginning welding, 84 farmers took advanced welding (same individuals) and 42 farmers took diesel maintenance courses, for a grand total of 197 enrollees.*
2. Require training recipients to pay part of the cost of the courses and equipment provided. *Farmers who received both welding courses paid a \$125 fee. Farmers who took the diesel maintenance course paid a \$50 fee. Using these numbers \$12,600 in enrollment fees was paid by participants. This number is also stated in the July 15th 2006 project quarterly report. Using the projects budgeted total cost of \$299,940 (includes MCCs in-kind match), participants paid approximately four percent (4%) of the total project cost.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *126 different KY farmers would have less knowledge and skills to enable them to maintain and repair their farm equipment.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *This program helped the participants reduce repair costs and improve equipment life by increasing farmers knowledge and skills. Annual savings on repairs for the 84 who took both welding courses was estimated at \$1,250 for the group each year, for a grand total of \$52,500 per year.*
3. How have ADF investments leveraged other resources? *Participants paid enrollment fees totaling \$12,600 or 4% of the total program costs.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Entrepreneurial leadership may have been enhanced if some of the participants took their new skills and started doing repair work for others as a secondary source of income.*

Organization: Murray State University

Project Title: Agricultural Diversification Enhancement Alliance

Award: Grant \$247,995—November 2003

Description: Murray State University is a public higher education institution with a long history of education in agriculture and service to the local farm community. The ABD had funded several large initiatives in Western Kentucky that involved non-traditional crops such as nursery and aquaculture production. An alliance was formed between several producer groups and MSU to start an education, demonstration and research project that would enable MSU to address the needs of farmers involved in these non-traditional enterprises. Specific partners in the alliance included: MSU, KY West Nursery Co-op, Purchase Area Aquaculture Co-op, The West KY Dark-Fired Tobacco Association, area cattlemens associations and high school agriculture programs with greenhouses.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Horticulture Enhancement Project. Establish a pot-in-pot nursery production initiative. Establish a Nursery Field Tree Initiative. Expand/renovate the MSU greenhouse complex. *A pot-in-pot production system was established on the Pullen Farm Complex with a 400 tree capacity. A nursery field tree demonstration and research site has been planted on the Pullen Farm Complex with 40 different tree species replicated five times each. Two new greenhouses built, one for container production and one for bedding plant production.*
2. Aquaculture Enhancement Project—Establish an aquaculture demonstration and research site. *Four aquaculture ponds and associated infrastructure have been built on the MSU West Farm Complex.*

3. Beef Cattle Enhancement Project—Establish an ultrasound research and demonstration program as a part of the MSU Beef Production Center at the West Farm Complex. *Ultrasound and electronic ID equipment have been purchased and are used for research and farm field day demonstrations.*
4. Agricultural Diversification Model Program Enhancement—Host “Agricultural Diversification Enhancement Alliance Field Days. *MSU hosted an ADEA Field Day in April of 2006 to showcase the initiatives. They also host a Farm Days field day each fall. Field day tours include stops at the aquaculture, nursery and greenhouse sites.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *Farmers in Western Kentucky who have an interest in learning about alternative enterprises would not have nearby demonstration plantings to visit or experienced MSU personnel to consult. Farmers who are already involved in these types of enterprises would not have MSU assistance to research problems specific to the diversification initiatives.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *This project was designed to assist regional farms and agriculture students with up to date information and demonstrations of new farm enterprises. Seventy-five farmers from six counties have been affected by the project as of the end of 2006. Forty-five high school students and one hundred-forty-one university students have visited the demonstration sites as of the end of 2006.*
3. How have ADF investments leveraged other resources? *The proposal shows the ADF funds would pay for 42% of the project. The rest of the project cost will be paid with cash and in-kind match from MSU and industry partners.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *The initiatives involved several regional farmers cooperatives and associations which require farmer leadership. MSU students and visiting farmers will be exposed to new farm enterprises.*

Organization: Purchase Area Aquaculture co-op

Project Title: Aquaculture Infrastructure Development

Award: Loans \$1,191,525 (\$980,275 used)—April 2001, June 2003

Description: Purchase Area Aquaculture Cooperative (PAAC) is a farmer owned cooperative organized to process and market aquaculture products in Kentucky. The primary product was fresh and frozen catfish fillets. 1999 some farmers in the Purchase Area of Kentucky were growing catfish and selling to pay lakes and an out of state fish processor. A trip was organized to go to Mississippi and Alabama to look at small hand file fish processing plants and talk to fish farmers in the area.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Double the fish production of co-op members to 4,000,000 lbs. of live fish annually and expand the cold storage facility in order to handle to increased volume of product being processed. *PAAC did build a large, new cold storage building using a combination of grants and loans. The co-op did not reach the 4 million pounds goal as the processing facility closed.*
2. Amend the prior ADF agreement to use \$240,000 in previously awarded funds as a guaranty for an operating line of credit with a local bank. *Done.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *There are now 3-4 times more fish growers and 3 times more catfish acres in Western KY than before the PAAC Co-op was started. Fish farms have stayed in business with some doing quite well marketing their fish to live haulers for pay lakes and some sales to out of state fish processing plants.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *When PAAC was in full operation they employed 46 full time people. At the peak PAAC had 34 farmer members with 436 acres of fish ponds. Currently there are 300 acres of catfish production in W. KY. Additional Net farm Income is estimated at .10 cents per lb X 5,000 lbs per acres X 300 acres = \$150,000 annual NFI impact.*
3. How have ADF investments leveraged other resources? *950,000 bank loan and \$200,000 USDA grant funds. PAAC members estimate that they invested over \$4 million dollars in member production investments and borrowed \$1 million in bank loans for the PAAC.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *The PAAC processing plant closing has forced area fish farms to find other markets. Aquaculture in Western KY remains a viable business. Most of the serious aquaculture farmers that were PAAC members have remained in business. The PAAC facility closing has probably had a negative impact in terms of new producers looking at aquaculture, however the potential for aquaculture in W. KY remains high due to the human capital, climate, soil, and water resources.*

Organization: Pig Improvement Corporation

Project Title: Dogwood Ridge Project

Award: Forgivable loan \$800,000—January 2004

Description: Pig Improvement Corporation (PIC) is a for-profit corporation registered in the State of Wisconsin. PIC has recently been purchased by Genus to become part of a larger internationally operated dairy, beef and swine genetics supplier.

PIC literature states that PIC is the leading worldwide supplier of swine genetic improvement to the pork chain. PIC was established over 40 years ago by 6 English pig farmers to supply breeding stock for themselves and others.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Rebuild the Dogwood Ridge Farm and restart their swine genetic improvement breeder supply business. *Accomplished. PIC states the total project cost was close to \$2 million dollars.*
2. Production support for KY producers. *PIC contributed \$10,000 in 2005 and in 2006 towards the KY Pork Producers Association annual convention. PIC also donated \$4,000 to the KY 4-H Livestock Judging contest in 2006. GOAP accepted these expenses as qualified loan forgiveness payments.*
3. Provide discounted pricing to KY producers and 125% of the agreed KY farmer discount to KY producers in the top 60 tobacco producing counties. *PIC officials stated they did not intend to proceed with this goal as they thought their non-KY customers would demand discounts as well. PIC was purchased by an international genetics firm after officials at PIC had signed the agreement with the ADB. The new management reorganized the company and let go many of the people involved in the ADF forgivable loan agreement.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *PIC may not have rebuilt their KY swine breeding facility, resulting in 13 less full-time on farm jobs (at Dogwood Ridge Farm).*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Dogwood Ridge farm pays approximately \$429,000 annually in salary and benefits to their KY employees. PIC produces and sells superior boars to another business in Allen County KY called Genesis. Genesis in turn collects semen from the boars, which are marketed to 14 KY hog producers (as well as other US producers). The 14 KY producers have 27,000 sows which would then have genetically superior off-spring.*
3. How have ADF investments leveraged other resources? *PIC rebuilt the Dogwood Ridge Farm at a cost of close to \$2 million dollars, therefore the ADF \$800,000 investment was matched greater than 1 to 1.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Organization: Roundstone Native Seed

Project Title: Expansion of Native Seed Distribution

Award: Grant \$177,600—June 2002

Description: Roundstone Native Seed (RNS) is basically a native (i.e. native to Kentucky and/or the US) seed distribution business. RNS produces seeds (native grasses) and sells mixes. RNS employs producers all across Kentucky especially those who are Farm Bill conservation participants. Most of the loan was used for equipment and storage bins. The rest was used for a greenhouse and planting plugs.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Provide economic advantage and management of costs of production through cooperative uses of capital investments, personnel, and marketing services to produce high quality product.
2. Provide members with land preparation methods, expertise, and equipment to establish seed producing stands of ecotype native warm season grasses. *Accomplished.*
3. Ensure highest quality native warm season grass seed available in the market.
4. Provide physical plant and marketing services. *Accomplished.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *Many producers would not have had an opportunity to diversify away from tobacco.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Tobacco dependent farmers became a part of a new business. A new farm product was marketed (value-added). Researched new varieties (biomass of native grasses), forage tests, chemical research on herbicides. All products are unique. RNS worked with high school programs. 11 full time and 8-8 part time jobs were created (some filled by youth). RNS gave away native demo plant seed. Producers from 21 counties were involved. RNS help keep farmers in business with additional income away from tobacco. Provided education and leadership for new products*
3. How have ADF investments leveraged other resources? *Kentucky Finance Corp Loan Guarantee*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *NRCS and FSA seminars for local leadership (10/year) and 42 new farmer producers.*

Organization: Southeast Kentucky Agriculture Cooperative (SEKYAC)

Project Title: Cooperative Development

Award: Grant \$154,525—February 2003

Description: SEKYAC is produce marketing cooperative. The cooperative was actually incorporated in 1976 per a Resource Conservation and Development project although nothing ever officially began until the Farm Bureau of Whitley County gave

some money to spark the co-op in 2002. Forty-one farmers are listed as members of the co-op. The co-op receives produce from approximately 40-60 acres between all 41 growers. One grower has 20 acres and the other 40 growers have one half to one acre each.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Construct a vegetable market facility. *Metal building has been built. No produce packing equipment was seen during our site visit. The building was mostly empty except for a small amount of produce set-up for retail sales to consumers who drove to the co-op. The manager at the time told me they couldnt justify turning on the produce cooler for the limited amount of produce they had on hand.*
2. Operate as a produce receiving facility for at least 10 years. *ongoing.*
3. Educate or put on programs designed to educate and train area producers regarding issues of vegetable quality, shipping, storage, and any other relevant production or transportation issues, working with UK Extension Service. *- ongoing.*
4. Purchase a cooler and a forklift. *accomplished.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Approximately 41 farmers would not have an additional venue to sell their produce for a profit.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *New produce marketing facility for at least an 8-county area. Revival of a produce co-op. Farm diversification for approximately 38 former or current tobacco farmers. Education opportunities for farmers involved to improve their farming practices and produce quality. At least one employment opportunity with Russell Reeves. Additional income opportunity for 30-40 part-time farmers.*
3. How have ADF investments leveraged other resources? *The ADF investments helped SEKYAC leverage addition money from the Farm Bureau (\$2,000), Industrial Authority (land valued at \$80,000), Fiscal Court of Knox County (\$4,000), County ADF (approximately \$20,000), donated legal assistance, and reduced cost engineering assistance.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *SEKYAC has been a leadership opportunity for the Board of Directors of the co-op.*

Organization: Shady Lane Poultry Farm

Project Title: Poultry Hatchery

Award: \$105,000 forgivable loan—November 2002

Description: The purpose of this project was to create a Kentucky-based chick hatchery catering to small farmers who raise and sell poultry and eggs using alternative production methods.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. The goal of the first year of the project is to involve at least three cooperating growers. The long-term goal of this project is to help provide Kentucky family farms with a secure source of income to replace tobacco.
2. Provide Kentucky farmers with a source of high quality, Kentucky-bred and hatched poultry. Provide poultry for the non-industrial commercial and specialty producers as well as the backyard fancier and exhibitor.
3. Be profitable. Develop new lines of broilers to fit the emerging markets and better serve the existing markets while preserving some of the heirloom and rare breeds.

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *This project would not have happened without ADB funds.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *New Internet market for KY chickens (1/2 of sales are online), increased net farm income for local farmers. Estimated operating costs were 30% of ADF money spent and 70% construction cost. Impacted 75-80 tobacco dependent communities. Affected more than 100 farm youth through Fayette Co extension, state youth poultry day, 4-H poultry groups, state fair youth poultry division, hatchlings to county extension, sold birds to kids.*
3. How have ADF investments leveraged other resources? *Positioned for other grants (e.g. sustainable agriculture and development).*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Indirect, non-formal, through new business opportunity.*

Organization: Shuckmans Restaurant Service, Inc.

Project Title: Shuckmans Fish Company and Smokery

Award: Forgivable loan \$300,000—September 2002

Description: Shuckmans Fish Company and Smokery (SFC) is a privately owned seafood processor and specialty food manufacturer. The business was started in 1919 originally with red meats; they now concentrate strictly on seafood, in particular freshwater fish, prawns and caviar. A \$300,000 ADF forgivable loan was awarded to SFC to remodel their processing facility

and to purchase additional equipment needed to process, smoke, package and market Kentucky aquaculture products including: prawns, catfish, trout, paddlefish, bass, caviar and red claw crayfish.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Continue operations during the ten year term of the loan as outlined in the business plan. *On-going business.*
2. Provide educational instruction and assistance to Kentucky aquaculture producers to assure quality standards are satisfied. *Mr. Shuckman has documented the time he spends advising KY farmers, agribusinesses and government officials.*
3. Pay KY seafood producers a 5% premium over market prices for their products and pay a 5% quality fee based on the fresh fish attributes. *Shuckmans have submitted documentation to GOAP that lists their purchases from KY producers. Approximately \$35,000 to \$40,000 of KY fish and aquaculture products are purchased annually.*
4. Repay the forgivable loan by purchasing KY fish and aquaculture products and receive 1/10 loan forgiveness annually. Forgiveness is granted at 25% of the purchase price plus the 5% premium fee and 5% quality fees paid to producers. *As of a May 2005 GOAP statement Shuckmans had received \$94,058 in loan forgiveness.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *KY aquaculture farms and commercial fishermen would have less of a market for there fish and shellfish.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Approximately \$35,000 to \$40,000 of KY fish and shellfish purchased annually. Shuckman's Fish Company and Smokery markets high quality fish and caviar nationally with a Kentucky logo and branded products.*
3. How have ADF investments leveraged other resources? *Matching money from the applicant.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Mr. Shuckman provides processing and marketing advise to KY fish farmers, direct marketers and government officials.*

Organization: Siemer Milling Company

Project Title: Wheat-based Glue Extender Facility

Award: \$1,000,000 Forgivable Loan—June 2004

Description: Siemer Milling Company relocated a newly acquired milling business to their Hopkinsville facility. The project will result in purchases of more Kentucky grown wheat for milling an organic glue extender marketed to the plywood and panel board industry. This will create new opportunities for additional farm income for the Kentucky wheat growers who currently produce wheat used at Siemer. In addition, the project will expand the economic impact of Siemer at its location in Hopkinsville. Funds were used for a new warehouse, a new blending and bagging system, and upgrades to the existing facilities and equipment to accommodate making industrial glue products.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Create a new market for Kentucky wheat. Expand purchases of Kentucky wheat. Develop a new value-added market for Kentucky wheat. *Accomplished. Siemer Milling purchased 1 million additional bushels of wheat in 2006 for processing into the new products. Developed new products from wheat: glue extenders such as Glue-X, Spray-X, Spray-X-MM.*
2. Improve net-farm income from a product that would otherwise be rejected or deeply discounted, purchasing additional wheat and increasing prices paid for low grade wheat, enabling savings in freight by eliminating the need to transport rejected loads to other locations, and improving the basis for Kentucky wheat over a long period of time. *Developed a market for lower quality wheat to be used in industrial glue. Siemer pays a 10 15 cent premium per bushel for KY grown wheat depending on the quality.*
3. Increase purchases of Kentucky wheat in the first year of operation by 400,000 bushels, or approximately 20% of what Siemer currently purchases directly from Kentucky producers. *Accomplished. In 2006 Siemer Milling purchased 8.1 million bushels of KY grown wheat. This amount was 2.4 million bushels over their baseline amount of 5.7 million bushels of wheat before the plant expansion was made.*
4. Position Siemers new glue extender business in as close proximity as possible to its end-users to improve profitability and invest resources in gaining market share. *Accomplished.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *There would be less KY grown wheat being sold at to Siemer Milling and receiving a 10 cent per bushel premium.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *In 2006 Seimer Milling purchased 2.4 million additional bushels of KY grown wheat over their base level. In 2006 and 2007 KY farmers received approximately 12 cent per bushel premium from Siemer Milling for their wheat. The added farm income:2.4 million additional bushels X \$.12 premium = \$288,000 annually. Approximately 112 farms in 10 counties have benefited from this project.*
3. How have ADF investments leveraged other resources? *This was a \$2.3 million dollar project of which the ADF provided a \$1 million dollar forgivable loan.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Organization: Appalachian Sweet Sorghum Marketing Association, Inc.

Project Title: Sorghum Production Expansion and Labeling

Award: Grant \$100,000—October 2001

Description: Appalachian Sweet Sorghum Marketing Association, Inc. has been made up of five to ten farmers over the years and is managed by Mr. Danny Townsend. Mr. Townsend is a 5th generation Sorghum producer and was instrumental in forming the Cooperative. Appalachian Sweet Sorghum is a non-profit corporation (marketing association) with 60 acres of sorghum currently and 5 farmers. Mr. Townsend grows 30 acres himself and the other five farmers grow 30 acres all together.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Purchase equipment to help the cooperative increase acreage and enhance their ability to market more sorghum syrup. Equipment includes: four row planter, stripping machine, cooling tanks, industrial boiler, miscellaneous tanks, bottling and labeling equipment, silage wagon, and forklift. *accomplished.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *Sweet Sorghum production would not be as viable a business for Mr. Townsend or the other farms involved in the Cooperative.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Net farm income has increased (\$700-800/acre net income for 5 farmers with 30 acres total and Mr. Townsend with 30 acres himself = approximately \$45,000 total). New products have been developed and value has been added to Kentucky made products (including apple butter w/ sorghum and sorghum suckers). Cooperative has contracted with Krogers Louisville distribution center. Employment has increased with five part time farmers and three seasonal (6 weeks) at \$8/hr*
3. How have ADF investments leveraged other resources? *The Cooperative has not leveraged other funds to date, but Mr. Townsend feels it may in the future.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Mr. Townsend has held many leadership positions including: helping form the National Sweet Sorghum Growers Association (serving on the Board of Directors and as national President) as well as many committees and advisory boards.*

Organization: Thoroughbred Shrimp Company

Project Title: Freshwater Prawn Hatchery/Nursery

Award: Forgivable loan \$125,000—November 2003

Description: Thoroughbred Shrimp Company (TSC) is a privately owned business started in 1998 in response to the increased demand for juvenile freshwater prawns for Kentucky aquaculture farms. A \$125,000 ADF forgivable loan was awarded for the purpose of expanding their hatchery/nursery facility in order to increase juvenile prawn availability and implement a size grading process to increase pond stocking rate accuracy. During the site visit we saw a fully operational freshwater prawn, marine shrimp and freshwater fish indoor hatchery and nursery facility. Freshwater prawn breeding stock, freshwater prawn juveniles, marine shrimp breeding stock, tilapia fingerlings and large mouth bass fingerlings were being raised in large indoor tanks.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Produce and sell freshwater prawn juveniles to KY farmers for aquaculture pond grow out. *Accomplished and on going since 2003. Approximately 50 farms per year purchase juvenile prawns from TSC.*
2. Provide KY aquaculturalists a discount of 3.5 cent discount per prawn juvenile, below the market price. And provide at least \$12,500 in discounts annually to receive debt forgiveness. *In four years of operation TSC has fully paid its debt forgiveness of \$125,000.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *Kentucky aquaculture farms would have a limited supply of in-state produced juvenile freshwater prawns. The largest competitor is located in Texas.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *KY aquaculture farms have a fresh local supply of juvenile shrimp for pond production with better survival rates than juveniles shipped in from Texas. KY aquaculture farms have a more accurate stocking rate due to an innovative juvenile prawn size grading method. The result is a more uniform final product and less feed wasted or pond space underutilized. KY freshwater shrimp farms have sold an estimated \$1.9 million dollars of freshwater shrimp (prawns) from juveniles produced at TSC since its inception.*
3. How have ADF investments leveraged other resources? *A \$250,000 bank loan was leveraged to complete the project.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *KY aquaculture farms have benefited by having a knowledgeable supplier of quality seed stock.*

Organization: West Kentucky Growers Cooperative

Project Title: Cooperative Development and Expansion

Award: Forgivable loans \$2,641,483 (\$2,509,778 used)—November 2001, March 2001, February 2003

Description: West KY Growers Cooperative (WKGCC) was a non-profit cooperative of farmers organized in 2000 for the purpose of grading, cooling, packing and marketing fresh market vegetables for its members. The primary crops grown and marketed were sweet corn and bell peppers. Lesser amounts of variety peppers, cabbage, potatoes, pumpkins, squash, cucumbers and broccoli were also grown and marketed.

Goals stated in terms sheet: (Evaluation Team comments in italics)

1. Expand and equip a produce marketing cooperative to grade, cool, pack and market fresh produce for farm members. *Accomplished but closed after six years.*
2. W KY Growers Co-op must repay a forgivable loan of \$605,000 in state ADF money by funding a reserve account of an equal amount over a five year period. *Not accomplished.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *Vegetable growers in the WKGCC area are more experienced with commercial produce production and marketing requirements. Of the 32 farms that grew most of the produce for the co-op, 10 continued to grow produce in 2006 and 9 continued to grow produce in 2007. 275 acres of vegetables are currently being grown by 6 vegetable growers; this is an 84% reduction in produce acres from the co-ops peak operation. County Extension personnel in Daviess County report that a total of seven produce marketing companies have contacted their office in the last two years looking for produce farms to contract produce crop production with. Of the seven marketing firms that contacted the extension office, five have contracted with vegetable growers in the area.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Potentially 1,800 acres X \$800 farm income = \$1,400,000 annually if the co-op could have sustained its output at the maximum achieved in 2003 and 2004. \$8,432,523 was paid out to farmer members for their produce during the co-ops six years of operations. The co-op had total sales of \$15,892,479 which had an effect beyond farm income for the co-op members. The co-op also paid co-op employees salaries, and did business with equipment manufacturers, construction and repair contractors, utility and supply companies and outside sales agents.*
3. How have ADF investments leveraged other resources? *West KY Growers Co-op also leveraged funds from the KY Dept. of Agriculture, USDA Rural Development, private investment dollars, bank loans and favorable lease terms from the original property owner. There was a large amount of community involvement in the co-op development effort, this included many hours of volunteer labor by farmer members and others in the community. \$2,509,778 in state ADF funding helped generate \$15,892,479 in produce sales = approximately \$6 dollars in sales per \$1 dollar invested.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Co-op members and others gave all to the effort. The co-op closing was disheartening to the farming community.*

K AFC project briefs

Organization: Tobacco Farm

Loan Program: Agricultural Infrastructure Loan (AILP)

Amount of Loan: \$18,250 (Total project cost: \$36,500)—May 2006

Description: Build a tobacco barn. Young farmer wanted to add five more acres of tobacco production and needed additional barn space.

Progress on goals stated in the Loan Program description: (Evaluation Team comments in italics)

1. AILP: Assist Kentuckys farmers in financing long-term projects that will improve their financial viability. *Farmer financed half the cost of building a new barn with a K AFC loan. The result of building a new barn is that he can add five more acres of tobacco production to his farming operation.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Farmer states he needed the K AFC loan in order to finance the new barn. The lower interest rate was attractive.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Five additional acres of tobacco production have been added to the farm operation leading to additional income and local employment.*
3. How have ADF investments leveraged other resources? *50% financing from a local lender.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *A young farmer was assisted with an expansion project for his small business.*

Organization: Thoroughbred Horses

Loan Program: Agricultural Infrastructure Loan (AILP)

Amount of Loan: \$50,000 (total project cost: \$113,840)—April 2006

Description: Purchased a farm and needed a horse barn for breeding and boarding horses for clients.

Progress on goals stated in the Loan Program description: (Evaluation Team comments in italics)

1. AILP: Assist Kentuckys farmers in financing long-term projects that will improve their financial viability. *Accomplished. New barn has been built with 13 horse stalls.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Borrower states he would have borrowed the money elsewhere if needed. No difference, other than a lower interest rate which makes the loan easier to pay back.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *The new barn has made a huge difference in his business. He can board more horses and care for them better as well. The new barn has added \$3,000 per month in new boarding income from clients.*
3. How have ADF investments leveraged other resources? *Loan from a local ag lender.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Equine entrepreneur is doing well with a part-time business.*

Organization: Swine farm

Loan Program: Agricultural Infrastructure Loan (AILP)

Amount of Loan: \$100,000 (Total project cost: \$848,981)—July 2006

Description: Build two new 2500 head swine barns. Young couple wanting to farm on their own decided to go into the hog business after they stopped raising tobacco.

Progress on goals stated in the Loan Program description: (Evaluation Team comments in italics)

1. AILP: Assist Kentuckys farmers in financing long-term projects that will improve their financial viability. *Accomplished. The borrowers state they made \$24,000 in net income from the hogs last year.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *No different, borrower states they could have gotten a loan elsewhere.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *The new hog enterprise generated \$24,000 in net income and provided 2 part-time and 1 full-time job in 2007*
3. How have ADF investments leveraged other resources? *Local ag lender loaned 50% of the project.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Organization: Lumber Company

Loan Program: Agricultural Processing Loan (APLP)

Amount of Loan: \$550,000 (Total project cost: \$1,250,000)—December 2008

Description: Purchase equipment and finance business expansion.

Progress on goals stated in the Loan Program description: (Evaluation Team comments in italics)

1. Agricultural Processing Loan purpose: to “provide loan opportunities to companies that add value to Kentucky grown agricultural commodities through further processing. *Accomplished. Company will purchase and use more timber and logs from Kentucky due to the added equipment.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *No difference, borrower says they could borrow the funds from a commercial lender.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *8 full-time jobs created at \$7 per hour*
3. How have ADF investments leveraged other resources? *KAFC loan was 20% of the total project cost*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Organization: Horse Farm

Loan Program: Beginning Farmer Loan (BFLP)

Amount of Loan: \$100,000 (Total project cost: \$569,000)—

Description: Young couple with horse training, boarding and sales experience wanted to buy a larger farm in order to expand their business and horse operations four-fold. They were renting a 40 acre farm. With KAFC and local bank they were able to purchase a 172 acre farm.

Progress on goals stated in the Loan Program description: (Evaluation Team comments in italics)

1. Beginning Farmer Loan Program (BFLP) purpose: to “assist emerging farmers who wish to create, expand or buy into a farming operation. *Accomplished. A young couple will have a full time farm enterprise in their name and ownership.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *One less full-time young farmer owned enterprise.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Four fold increase in farm operation, potentially leading to \$100,000 in annual farm income.*
3. How have ADF investments leveraged other resources? *Local bank farm ownership loan*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Organization: Cattle and Grain Farm

Loan Program: Agricultural Infrastructure Loan (AILP)

Amount of Loan: \$20,000 (Total project cost: \$37,665)—November 2006

Description: Build multi-purpose barn with shop and machinery / hay storage. Farmer had barn destroyed 3 times with weather or fire events. Used a KAFC loan and local bank loan to rebuild his barn.

Progress on goals stated in the Loan Program description: (Evaluation Team comments in italics)

1. AILP: Assist Kentuckys farmers in financing long-term projects that will improve their financial viability. *Accomplished. Multi-purpose barn will add value to hay crop and save on feed costs.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Possibly one less KY farmer in business today.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *By storing hay in the barn farmer increased its value by \$1,080*
3. How have ADF investments leveraged other resources? *Local bank loan*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Organization: Bio-Processing company

Loan Program: Agricultural Processing Loan (APLP)

Amount of Loan: \$3,600,000 (Total project cost: \$8,400,000)—February 2006

Description: To purchase from bankruptcy court the assets and faculties of Large Scale Biology Corporation (LCBC) in Owensboro, KY. KY Bio-Processing, Inc. (KBI) is a newly formed company that proposes to continue the plant based protein derived pharmaceutical manufacturing started by LSBC. KBI will operate as a contract research facility rather than a product

development and marketing firm. If successful, KBI predicts the potential to contract thousands of acres of crops (tobacco plants) in order to manufacture a fully developed and approved pharmaceutical product.

Progress on goals stated in the Loan Program description: (Evaluation Team comments in italics)

1. Agricultural Processing Loan purpose: to “provide loan opportunities to companies that add value to Kentucky grown agricultural commodities through further processing. *At the time of our interview and site visit KBI was not contracting a significant amount of field crops to be grown by area farmers. A fully approved pharmaceutical product, ready for mass production is a long term process sometimes taking ten years to complete.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *No difference in the short run. If KBI is successful in the future there could be profitable contracts for area farmers to grow specialty crops.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *No effect on farm income, as yet. Community development: 17 full time jobs created or maintained with an average salary of \$60,000 annually. Two other bio-pharmaceutical companies have since moved to the Owensboro area: Intercept and Map. The two have a combined employment of approximately 8 employees*
3. How have ADF investments leveraged other resources? *Investment of \$2.3 million dollars into the project from Owensboro Medical Health System and a continuation of a \$2.9 million dollar loan from Kentucky Technology, Inc.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *KBI is training local farmers how to grow certified bio-engineered crops to meet all regulations and specifications.*

Organization: Beginning Farmer

Loan Program: Beginning Farmer Loan (BFLP)

Amount of Loan: \$37,500 (Total project cost: \$150,000)—February 2008

Description: Young person with out a family farm wanted to purchase a 77 acre farm to begin his own enterprise. He is currently managing a large farm for someone else. The KAFIC loan provided the down payment for him to purchase land in his name. He plans to crop share with his current employer to make the mortgage payments.

Progress on goals stated in the Loan Program description: (Evaluation Team comments in italics)

1. Beginning Farmer Loan Program (BFLP) purpose: to “assist emerging farmers who wish to create, expand or buy into a farming operation. *Accomplished. Young farmer has made his first farm land purchase.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *It would be harder for a young farmer to purchase farm land.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *A 77 acre farm owned by a young farmer (less than 30 years old). \$15,000 in farm income going to a young farmer.*
3. How have ADF investments leveraged other resources? *Local bank loan for farm ownership.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Encouraged a young farmer to start his own farm business.*

Organization: Row Crop Farm

Loan Program: Agricultural Infrastructure Loan (AILP)

Amount of Loan: \$44,000 (Total project cost: \$88,000)—September 2006

Description: Grain farm wanted to add additional grain bin for crop storage.

Progress on goals stated in the Loan Program description: (Evaluation Team comments in italics)

1. AILP: Assist Kentuckys farmers in financing long-term projects that will improve their financial viability. *Accomplished. The farm added a 62,000 bushel grain bin to their existing 302,000 grain storage facility.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *No difference. This is a well financed, successful business that could borrow the money else where if needed.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *An additional 62,000 bushels of grain storage has been added to a farm business.*
3. How have ADF investments leveraged other resources? *Borrowed \$44,000 from a local Ag lender.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Organization: Tobacco, hay and beef cattle farm

Loan Program: Beginning Farmer Loan (BFLP)

Amount of Loan: \$100,000 (Total project cost: \$200,000+)—July 2008

Description: Purchase 132 acres of farmland. Young farmer wanted to purchase some of the families land in order to establish his own farm business separate from his parents farm business. He plans on continuing the farming tradition in his family and is the 5th generation to own the land he purchased with help from KAFRC and a local bank.

Progress on goals stated in the Loan Program description: (Evaluation Team comments in italics)

1. Beginning Farmer Loan Program (BFLP) purpose: to “assist emerging farmers who wish to create, expand or buy into a farming operation. *Accomplished. Young farmer purchased 132 acres of farmland to establish his own farm business.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *One less young career farmer.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Too early to have any income results.*
3. How have ADF investments leveraged other resources? *Local bank loan.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Young farmer with career ambition in farming.*

Organization: Wood Products

Loan Program: Agricultural Processing Loan (APLP)

Amount of Loan: \$53,000 (Total project cost: \$106,000)—January 2007

Description: To purchase equipment needed to process and bundle firewood for retail sales. The Company was in the business of selling logs purchased from Kentucky land owners. The owners of the business obtained a marketing agreement with a major marketing company that sell firewood products to convenience stores and other retail outlets. Additional equipment was needed in order to process logs into split firewood, bundled for retail sales.

Progress on goals stated in the Loan Program description: (Evaluation Team comments in italics)

1. Agricultural Processing Loan purpose: to “provide loan opportunities to companies that add value to Kentucky grown agricultural commodities through further processing. *Accomplished. Kentucky grown timber will be processed into retail firewood bundles. The additional processing will add value to the raw commodity: logs.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *The value of timber stands will be improved due to the creation of an additional outlet for lower quality logs.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *No difference other than, the low interest rate helps make the loan easier to pay back. The owner states they would have borrowed the money elsewhere if KAFRC was not available.*
3. How have ADF investments leveraged other resources? *Local bank loan.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Organization: Dairy Farm

Loan Program: Agricultural Infrastructure Loan (AILP)

Amount of Loan: \$100,000 (Total project cost: \$758,249)—September 2008

Description: Build Free Style Dairy Barn. Dairy farm wanted to add a fourth free style dairy barn to their existing operation. The barn will house 300 milking dairy cows. The addition of the fourth barn brings the milking herd to 1,200 head. At this level of production the farm can hire one of the owners sons as a full-time manager of the dairy herd and milking facility.

Progress on goals stated in the Loan Program description: (Evaluation Team comments in italics)

1. AILP: Assist Kentuckys farmers in financing long-term projects that will improve their financial viability. *Accomplished but as a minor part of the project (10% of the project cost).*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *No difference, they could find financing elsewhere if needed.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *Manager states they did the project 6 months sooner because of the KAFRC loan being available. Income calculation: 6 months X 30 days X \$4,000 per day X 10% of the project = \$72,000 in farm income generated*
3. How have ADF investments leveraged other resources? *N/A*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Organization: Cattle, Hay and Tobacco Farm

Loan Program: Beginning Farmer Loan (BFLP)

Amount of Loan: \$100,000 (Total project cost: \$1,233,158)—May 2007

Description: Purchase part of 308 acre farm family LLC is buying. Young man wanted to buy into the family farming Limited Liability Company and participate in purchasing a 308 acre farm to add to their existing properties.

Progress on goals stated in the Loan Program description: (Evaluation Team comments in italics)

1. Beginning Farmer Loan Program (BFLP) purpose: to “assist emerging farmers who wish to create, expand or buy into a farming operation. *Accomplished. Young farmer borrowed funds from K AFC to pay down payment on land purchase.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *It would be harder for young farmers to borrow down payment funds to purchase land.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *2007 projected net farm income of \$145,000 X 10% X 2 years = \$29,000.*
3. How have ADF investments leveraged other resources? *K AFC provided the down payment (2 brothers X \$100,000 each) of the remaining amount; \$799,200 was financed by a local bank with FSA loan guarantee.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *Two young farmers will pursue a career in farming.*

Organization: Alpacas

Loan Program: Agricultural Infrastructure Loan (AILP)

Amount of Loan: \$98,000 (Total project cost: \$149,427)—October 2007

Description: Barn and sales room. Farm raises, boards and breeds alpacas and needed a clean modern facility to care for young animals and breeding stock as needed. They also wanted to add a sales room for finished wool products and an office to meet with clients wanting boarding/breeding services for their animals.

Progress on goals stated in the Loan Program description: (Evaluation Team comments in italics)

1. AILP: Assist Kentuckys farmers in financing long-term projects that will improve their financial viability. *Accomplished. They have built a new barn with sales area and an office as well as animal care facilities.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Slower growth for this business without K AFC. The farmer states they would have done the project anyway but at a smaller size. Farmer states they would not have built as big a facility with out the K AFC low interest loan. Their business is going well and the new facility helps their efficiency and improves their marketing efforts.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *1 additional full-time job caring for increased boarding/breeding stock.*
3. How have ADF investments leveraged other resources? *50% loan from local bank.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *The loan has helped a non traditional agriculture enterprise to expand thereby increasing the entrepreneurial expertise in the area.*

Organization: Tobacco and Cattle Farm

Loan Program: Agricultural Infrastructure Loan (AILP)

Amount of Loan: \$61,377 (Total project cost: \$125,506)—November 2005

Description: Build three new tobacco barns. Farmer wanted to add 30 additional acres of tobacco production to his farming operation and needed more barn space to cure tobacco. Farmer sought funds to build three new tobacco barns.

Progress on goals stated in the Loan Program description: (Evaluation Team comments in italics)

1. AILP: Assist Kentuckys farmers in financing long-term projects that will improve their financial viability. *Accomplished. Farmer has added three more barns and is growing more tobacco which is a profitable crop for him. He will produce an additional \$125,000 in farm income from the additional acres grown.*

The 4 Questions:

1. Where would Kentuckys agriculture be without the ADF investments? *Farmer would be paying a higher interest rate and maybe take longer to pay off the loan to build new barns.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *No difference other than, the low interest rate helps make the loan easier to pay back. The owner states he would have borrowed the money elsewhere if K AFC was not available.*

3. How have ADF investments leveraged other resources? *Loan from a local agricultural lender.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Organization: Tree Farm

Loan Program: Beginning Farmer Loan (BFLP)

Amount of Loan: \$100,000 (Total project cost: \$200,000)—June 2006

Description: Purchase equipment. Young farmer needed to purchase specialty equipment to harvest nursery stock.

Progress on goals stated in the Loan Program description: (Evaluation Team comments in italics)

1. Beginning Farmer Loan Program (BFLP) purpose: to “assist emerging farmers who wish to create, expand or buy into a farming operation. *Accomplished. Young farmer was able to purchase specialty equipment needed to produce and harvest at scale.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *Possibly one less young full-time farmer in business or a young farmer with a less efficient business due to a lack of proper equipment. KAFCC loan help with down payment money and a longer pay back period as well as a lower interest rate.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *A new farm enterprise has been expanded to become a career. Young person left a professional white collar job to farm full-time.*
3. How have ADF investments leveraged other resources? *50% loan from a local ag lender.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *One more full-time young farmer for leadership and entrepreneurial spirit.*

Organization: Poultry Farm

Loan Program: Agricultural Infrastructure Loan (AILP)

Amount of Loan: \$100,000 (Total project cost: \$353,800)—April 2007

Description: Construct 2 new poultry barns. Poultry Farm with 4 existing poultry barns wanted to expand operations and build 2 more barns. Broilers are contracted with Pilgrims Pride Company.

Progress on goals stated in the Loan Program description: (Evaluation Team comments in italics)

1. AILP: Assist Kentucky's farmers in financing long-term projects that will improve their financial viability. *Accomplished. Owners have been in the chicken business for 18 years. Adding two more barns will increase their farm income.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *No difference other than, the low interest helped make this loan easier to pay back. The owner states they probably would have borrowed the money without KAFCC if need be.*
2. What have been the quantitative and qualitative impacts of ADF expenditures? *The owner states they expect their farm income to increase approximately \$84,000 annually by adding the two new barns.*
3. How have ADF investments leveraged other resources? *\$253,000 loan from a local bank.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Organization: Grain and tobacco farm

Loan Program: Agricultural Infrastructure Loan (AILP)

Amount of Loan: \$35,000 (Total project cost: \$70,890)—January 2007

Description: Purpose was to build 25,000 Bu grain bin and add elevator leg. Two brothers farming in Daviess County wanted to expand their grain storage capacity in order to market grain at more favorable prices after harvest season has ended.

Progress on goals stated in the Loan Program description: (Evaluation Team comments in italics)

1. AILP: Assist Kentucky's farmers in financing long-term projects that will improve their financial viability. *Accomplished. The farmers stated they received more money for their corn crop last year as a result of being able to store it and sell later at better prices. The grain storage project has improved the borrowers financial viability by reducing the price risk by adding more marketing time.*

The 4 Questions:

1. Where would Kentucky's agriculture be without the ADF investments? *No difference. Borrowers and lender say they would have done the project any way.*

2. What have been the quantitative and qualitative impacts of ADF expenditures? *At the interview the borrowers stated they gained \$1.70 per bushel in sales price last year by storing their corn and selling at a later date. 25,000 bushel X \$1.70 = \$42,500 in additional farm income in the first year*
3. How have ADF investments leveraged other resources? *Local bank loaned 50% of the project cost.*
4. How have ADF programs affected county leadership and entrepreneurial leadership? *N/A*

Appendix C

Expert group summaries

Co-op Expert Meeting Notes

Elizabethtown, KY—November 20, 2007

UK Evaluation Team:

Dr. Craig Infanger, Jim Mansfield, Laura Powers

Invitees in attendance:

John Bell—Produce Farmer, President KY Horticulture Council

Angela Caporelli—KDA Marketing Specialist, Aquaculture

Annette Heisdorffer—Daviness County Horticulture Extension Agent

Nathan Howard—Daviness County Ag Extension Associate, Produce Crops

Nathan Howell—UK Ag Extension Associate, Produce Crops

Brent Lackey—KY Center for Ag and Rural Development

Glen Roberts—Wayne County Ag Extension Agent

Larry Snell—Exec. Director, KY Center for Ag and Rural Development

Dr. Tim Woods—UK Ag Extension Specialist, Agribusiness

Forrest Wynne—KSU Area Extension Agent, Aquaculture

General notes about co-ops

ADB and other enablers had the wrong expectations. We should have looked at the co-ops as a stepping stone in the transition from being cattle and tobacco farmers producing non-perishable farm products, to growers of perishable products which have much higher requirements in terms of post harvest handling, timely marketing and a low tolerance for off quality.

Vegetable co-ops on average were returning only 50% of the sales receipts to members in grower payments. This resulted in low profitability to farmers and apparently was still not enough co-op deductions to pay the total costs of operations (even when the facilities were heavily subsidized). Conclusion: this was not a sustainable business model. The co-ops operated only seasonally but had expenses year round.

Vegetable co-ops removed problems faced by new produce growers. They had to learn to grow and harvest perishable crops, but they didn't have to ALSO grade, pack and market the crops simultaneously.

Co-ops were supposed to take some of the risk away from the new ventures: less capital outlay needed for post harvest handling (washing, grading, cooling, packaging and marketing).

“A past West KY tomato co-op resulted in two generations of successful production and 30 years later we still see the effects.

Reported that GOAP staff dictated to applicants what the project goals would be. Push was for co-ops to include more growers and counties which was counter to business efficiency and product quality because they had to take on inexperienced growers and more logistics.

ADF money was available only for equipment and construction (expansion) even when management was identified as a critical issue and not funded!

The on farm investments made by farmers to buy specialized farm equipment (transplanters, mulch layers, sprayers, harvest equipment, etc), irrigation and handling facilities was probably more money than all of the ADF funds invested in produce, nursery or aquaculture co-ops.

The co-ops contributed to agriculture diversification, institutional development and facilitated new grower investments in non-traditional enterprises.

Notes about specific projects

Appalachian Sweet Sorghum

- Still in operation
- Not incorporated as a co-op, KCARD says they are a 501-C3 non-profit corporation

Central KY Growers Co-op

- Still in operation
- 50-60 farmers all toll over the years from 15-16 counties, approximately 30 growers at its peak. 75-80% of the first year members are still growing vegetables.
- 20-25 members are still growing produce
- 10 members continue to market produce through the Co-op

Cumberland Farm Products

- Operated for 30 years, now closed.
- As the co-op member base gained experience, they diversified their crops and marketing so that in time they did not need the co-op.

Green River Growers

- Closed, facilities sold.
- Most of the past members still grow produce for sale at farmers markets, produce auctions or on a contract basis.

West KY Growers Co-op

- Closed, facilities leased to a 3rd party.
- The County ADF money was turned into a forgivable loan when it was meant to be a grant.
- Not true that vegetable production is “back to square one.”
- Extension office in Owensboro has been approached by seven different produce marketing firms who expressed an interest in contracting with growers for commercial vegetables, five of the seven did find growers to work with.
- 32 farms grew for the co-op. In 2006 10 of those farms continued with commercial vegetable production. In 2007 9 of the farms grew commercial vegetables.

Purchase Area Aquaculture Co-op

- Closed, facilities sold.
- Aquaculture in Western KY is still going and doing well, some examples of significant sales from aquaculture farms were given.
- The State pond-cost share was not the sole reason for lack of fish production acres. Growers stopped putting in ponds due to the co-ops not paying for members fish (“using members as a bank”). Also operational/sales problems at the co-op raised concerns among potential new producers. Pond cost-share was stuck in a legislative quagmire due to funds remaining earmarked for Eastern KY and yet need was in Western KY where they had used up all their allotted cost-share funds.
- New growers need 5 years to learn aquaculture production competency.
- KY aquaculture needed to do this (try and fail at having a fish processing plant), in order to get beyond that idea and focus on the live fish markets instead.
- Live fish markets are more of a hassle to deal with as the farmer has to do multiple harvests of their ponds to supply a steady amount of fish to buyers weekly as opposed to a one time total pond harvest for processing.
- PAAC built a plant for fresh market fish processing. It turns out the markets they developed were for frozen fish.
- Western KY aquaculture farmers are now making money.

- There are now 3-4 times more fish farmers and 3 times more acres of catfish than before the PAAC were started. This is a direct result of the co-op.
- Grower numbers are down from the peak; 30 growers down to 15 with 300 acres of fish production.

KY West Nursery Co-op

- Closed, facilities sold
- “Co-op was a significant success
- Example: new grower started with 10 acres, is now up to 50 acres of nursery crops
- Co-op lending power was a significant boost to new growers, allowing them to expand much faster than self financed start-up ventures
- KY West Nursery was going to happen, with or without ADF money. They had a professional feasibility study done and had been planning to do something.

Grain Expert Meeting Notes

Elizabethtown Cooperative Extension Office—November 19, 2007

UK Evaluation Team:

Dr Craig Infanger, Dr. Rick Maurer, Jim Mansfield

Invitees in attendance:

Mark Galoway—Grain-Elevator in Hardinsburg , Agri-Alliance Co.

Kennith Hayden—Grain Farmer and KY Corn Growers Association

Chad Lee—UK Ag Extension Specialist, Agronomy

Ed McQueen—KY Farm Bureau, Commodities Analyst

Rankin Powell—Union County Ag Extension Agent

Steve Riggins—UK Ag Extension Specialist, Grain Marketing

Doug Shepard—Hardin County Ag Extension Agent

Jay Stone—Christian County Ag Extension Agent

Jack Trumbo—Grain Farmer and KY Soybean Growers Association

Brent Williams—Feed Manufacturer, Producer Feeds Co., President of KY Feed and Grain Association

General notes about grain industry

- The amount of grain acres in KY is static at approximately 1.2 -1.3 million acres each, more corn acres = less soybean acres.
- Four major grain buying companies have river port terminals in Kentucky (Owensboro). The river system with access to the Mississippi River has created price competition among buyers. KY river price is the best in the country.

- Starting in 1992 chicken contract production with its subsequent feed manufacturing has boosted the KY corn price.
- Each poultry feed plant purchased approx. 10 M bushels of corn.
- KY average seasonally adjusted price for corn compared to the US SAP roughly went up about 1% for each new chicken feed processing plant.

Notes about specific projects

Commonwealth Agri-Energy

- Commonwealth Agri-Energy (CAE) is purchasing a similar amount of corn.
- Commonwealth Agri-Energy has probably affected the SAP of KY corn a similar amount—about 1% increase in price.
- CAE being owned by members of the Hopkinsville Grain Elevator Co-op will have a larger impact on net farm income because they are paying farmer members a patronage refund from the ethanol profits in addition to a 1% price premium.
- CAE has paid a patronage dividend of 44 cents in 2006, \$1 dollar in 2007 and is estimated to pay a reduced rate of 15–18 cents in 2008 due to the decreased demand for ethanol as a fuel additive.
- A negative impact from CAE may be the competition for grain crops between CAE and smaller grain elevators in the area. “Competition will thin out the ranks then the price will go back to normal.

Owensboro Bio-diesel Plant

- Siemer might be paying a premium on the low quality wheat they buy for glue extender; however the wheat is heavily docked to begin with.
- Privately owned, no patronage refunds to farmers.
- Will provide a source for bio-diesel in KY.
- No effect on price or the market for soybeans due to adjacent grain buyers and international markets, prices stays about the same.
- The \$1 dollar federal subsidy on bio-diesel is the only thing that is keeping soy diesel being made. Soybeans are too expensive.

Siemer Milling

- Siemer might be paying a premium on the low quality wheat they buy for glue extender; however the wheat is heavily docked to begin with.
- Siemer is expanding the market for KY wheat because they are buying the off quality wheat as well as the higher quality wheat. Few outlets for the off quality wheat prior to Siemers ADF funded expansion into industrial glue products.
- Siemers premium payments of 12 cents per bushel are an addition to net farm income in KY of about \$288,000 in 2006.

Lake Cumberland Milling (LCM)

- Will have an impact due to the basis deficit (transportation costs to river port terminals). 40 cent premium paid may actually be a 5 cent premium plus transportation saving to Owensboro. 5 cents X 250K bushels = \$12,500 additional net farm income. LCM is a benefit to farmers with a 5 cent premium and a source of slightly cheaper soybean meal for livestock feed.

Christian County Grain

- Slight premiums paid for food grade corn.
- Approximately \$27,750 annually at present.
- Project is not fully implemented yet.
- Farmers may not see a premium for corn sold as bagged deer corn but grain company should earn more, selling a retail ready product.

Horticulture Expert Meeting Notes

UK Student Center—November 9, 2007

UK Evaluation Team:

Dr. Craig Infanger, Dr. Rick Maurer, Jim Mansfield, Bonnie Wathen, and John Woolley

Invitees in attendance:

Dr. Tim Coolong—UK Ag Extension Specialist, Vegetable Crops

Tom Cottrell—UK Ag Extension Specialist, Enology

Dr. Win Dunwell—UK Ag Extension Specialist, Nursery Crops

Maurice Fegenbush—President, KY Fruit Growers Association

Amy Fulcher—UK Ag Extension Associate, Nursery Crops

Nathan Howell—UK Ag Extension Associate, Produce Crops

David Spaulding—UK Ag Extension Associate, Produce Crops

Dr. Dewayne Ingram—Chairman of the UK Horticulture Department

Dr. Terry Jones—UK Ag Extension Specialist, Horticulture

Dr. Kaan Kurtural—UK Ag Extension Specialist, Viticulture

Todd Ryan—Vice President of KY Landscape and Nursery Association

Chuck Smith—President, KY Vineyard Society

Robert Stone—President, KY Vegetable Growers Association

Dr. John Strang—UK Ag Extension Specialist, Fruit and Vegetable Crops

Dr. Tim Woods—UK Ag Extension Specialist, Agribusiness

General notes about KY Horticulture

KY Ag. Statistics Service Statistics: Cash Receipts from Farm Marketings 2000–2006:

- 47% increase in horticulture crops cash receipts.
- 70% increase in produce crop cash receipts.
- 42% increase in floriculture cash receipts.
- 31% increase in nursery, greenhouse and sod cash receipts.

Other notes:

- Approximately half of the 8-10% annual growth of KY produce crops is due to the ADF funded horticulture projects.
- ADF funded projects were successful because they addressed three needed areas: 1) education, 2) infrastructure, 3) promotion/marketing.
- “Ag statistics for horticulture are under reported.
- Look at the number of new horticulture growers started during the time period.

Notes about specific projects

Horticulture Council (HC)

- HC funded critical research for a rapidly changing industry.
- On farm demonstrations and extension associates advisory work “tremendous success in bringing technology to the growers.
- 69% increase in vegetable crop cash receipts.
- HC funded KDA cost-share for trade shows has led to a large KY presence in the Central US nursery industry and has enhanced marketing opportunities for KY growers.
- 78-80% KY Grapes are now planted in appropriate cultivars—university research has educated KY growers on the weather related risks of non-hybrid grapes.
- HC funding is not secure, w/o ADF funds new growers will have harder time.

Produce Cooperatives

- Co-ops were under funded, KDA marketing assistance—could be more.
- Co-ops brought in large out of state produce buyers.
- Co-ops helped get new produce farmers started.
- Co-ops reduced the costs and risks for new growers by assuming the grading, cooling, packing and marketing functions.
- Post co-op—out of state produce buyers are asking extension agents about produce farmers to contract with.
- Produce farming was not as progressive until ADF funding.
- ADF Horticulture projects and HC technical assistance stimulated change.

- Green River Growers Co-op—40-50 co-op members, now 30 growers still w/ produce crops.

Grapes and Wineries, Grape and Wine Council

- The industry needed a KY extension winemaker (enologist) and viticulturist. They are making a big difference to successful outcomes.
- The Grape and Wine Council is just getting started, “will have a positive impact in the future.
- Winery investments started with 5 wineries—now 44 listed wineries.
- 92% increase in farm marketing cash receipts (KY Ag Statistics) from “Other fruits, nuts, and berries category (wine grapes/berries)
- “Agri-tourism effect is working. Henry County is a positively impacted tobacco community.

KY West Nursery Co-op (KWNC)

- “Co-op was unfair competition to those already in the business, the ADF money gave the new growers an ability to jump into production at a much higher level than a self financed business could.
- “This is a success story, new growers have gotten established and some are expanding operations. An example: one new grower started with 10 acres of production and is now up to 50 acres of production.
- KWNC doubled production in a short time period which hurt prices for the other existing growers.
- HC and Extension funded personnel have made the difference between success and failure for the new growers.
- Of the 22 members of the co-op, 15 are still in production.

Livestock Expert Meeting Notes

UK Student Center—November 29, 2007

UK Evaluation Team:

Dr. Craig Infanger, Dr. Rick Maurer, Jim Mansfield, Bonnie Wathen

Invitees in attendance:

Jim Akers—CFO of Bluegrass Stockyard

Tess Caudill—KDA Marketing Specialist, Sheep and Goats

Tim Detrich—KDA Marketing Specialist, Beef

Dr. Jack Macallister—UK Ag Extension Specialist, Dairy

Glen Mackie—Bourbon County Ag Extension Agent

Dr. Lee Meyer—UK Ag Extension Specialist, Livestock Marketing

Mike Oveson—Executive Director of KY Pork Producers Association

Eunice Schlappi—KDA Marketing Specialist - Dairy
Dr. Jim Tidwell—KSU Aquaculture Program Director

Notes about specific projects/sectors

KY Dairy Development Council (KDDC)

After the state government administration changed the ADB focused more on traditional KY agriculture enterprises such as Dairy, Beef, Hay, Grains etc. The goal of the KDDC is to modernize KY dairy farms. One approach to this has been through the MILK incentive program. KDA Marketing Specialist Eunice Schalappi estimated that 10% of KY dairy farms are now signed up with the incentive program and or the young farmers program. In 2005 there were 1200 dairy farms in KY, that same year 500 attended some KDDC sponsored educational event. There are over 50,000 dairy heifers being grown under contract in KY, it is too soon to determine if successful.

KY Beef Network (KBN)

The initial approach was to throw everything possible at the wall and see what sticks. KBN has spent a large amount of their funds on their educational efforts. Farmers had opportunity to participate in these educational programs such as Master Cattlemen, Advanced Master Cattle, and Master Grazer, etc. They were then better able to take the KBN information and put it to use because they had county model program money to cost-share on improved cattle handling systems and improved genetics. ADF money for KBN personnel was essential to the success of the program.

Beef producers needed three things in order to thrive:

1. Good accurate information
2. Price discovery, marketing assistance
3. Extension Education

CPH-45 Sales—Education, organization and promotion have led to the success of the CPH 45 sales. Cost-share for the stock yards helped them better handle CPH-45 cattle as well as the PVP program. The reputation of Kentuckys cattle has been elevated as a result of CPH-45 sales and other positive cattle purchasing experiences. This may be evidenced by better pricing for KY cattle. Existing order buyers have increased their purchases of KY cattle as well as attracting significant new players into the KY market. The PVP program is just getting going with the reopening of exports to Japan. PVP is aimed at the export market. Cow numbers in KY have been rising while cow numbers in surrounding states have fallen.

“The only thing you need to do to get something to happen is to lay the money on the table. Farmers will find a way to get it. Our biggest failures happened when we have gotten into the production side and tried to force something to happen.

Sheep and Goat Development Office

It is too soon to determine if successful.

Burn Larkin Farm

The educational program was good. A lot of people started their goat enterprise as a result of visits or programs their. The educational component of the project was probably money well spent. UK had no goat program at that time.

Aquaculture

Fish and prawn hatcheries and nurseries are needed in order to keep aquaculture production opportunities within the state. The failure of the PAAC Co-op has hurt the aquaculture effort in Kentucky. Most of the aquaculture ponds in W. KY are still in production with sales to pay lakes and out of state processors. West KY has potential in aquaculture due to an abundance of water, suitable soils and climate. One component that is missing is an organizational structure to grow the aquaculture effort. There are other successful aquaculture farms in the state besides catfish. An example is a very successful largemouth bass grower in the Bardstown area with approx. 50 acres of water and \$5/lb live market sales to out of state buyers (Toronto Canada).

Marketing and Promotion Expert Meeting Notes

Crowne Plaza Campbell House Inn—December 13, 2007

UK Evaluation Team:

Dr. Craig Infanger, Dr. Rick Maurer, Jim Mansfield, Bonnie Wathen, And Dr. Harry Kaiser—Consultant—Cornell University

Invitees in attendance:

Janet Eaton—KDA Marketing Specialist, Farmer's markets

Millard Long—Katelyn's Honey, Private label food manufacturer

Ed Rogers—Green River Cattle Company

Dan Barbachek—Red7E Advertising

Steve Hensley—Wave TV

Gary Osborne—Roby's Food Distribution, produce wholesaler

Susan Schlosnagle—egg producer

John Sharp—Beef & Grasshoppers LLC

Sandy Corlett—organic farmer

Kentucky Department of Agriculture—KY Proud Program

Comments about the KY Proud Program

- The KY Proud program has taken on its own identity. The program is no longer about KDA; its about KY grown products.
- The single KY Proud logo, the famous sports people as spokespersons for the program and the dollars invested in advertising have made an impact.
- The program should continue putting money into labeling so the customer knows KY Proud products when they see them.
- KY Proud as a brand on a multitude of products gives retailers some confidence that there is a supply even if particular items come and go seasonally.
- In rural areas the community farmers markets are the face of KY Proud. Many of the 115 farmers markets across the state use KDAs at cost promotional items to promote their locally grown items. Many farmers market vendors (estimated to be 2,015 in 2007) use KY Proud logo bags, banners and clothing in their booths.
- The KY Proud brand is selling quality (local, fresh, wholesome) usually priced higher
- Wave 3 TV: The 50/50 cost-share advertising with retailers is effective; he can see the impact at the store level. Without the KDA ad money the retailers probably would not continue the KY Proud ads.
- Consumer trends nation wide have also driven the interest in local food products. KY Proud has grown right along with that. KY Proud can not take all the credit of KY consumer interest. The KY Proud logo is a way for consumers to find the local products. Questions of why there is not a requirement that KY Proud products have to be composed of mostly KY agriculture products.
- Louisville Advertising Executive: “KY Proud as a whole got a good value for the \$10 M in terms of brand recognition and consumer buy in. To build equity in a brand for \$2 million dollars a year is a bargain.

Comments about KDA

- KDA staff has been very helpful. The grant money they gave us to develop labels was important to us.
- KDA gave us a small grant to help with the box set-up cost for KY Proud tomato boxes. We sell a lot of local tomatoes to Cracker Barrel Restaurants. Their customers are interested in KY Proud (local produce).

Comments about Allied Food Marketers West

- Allied has helped get KY Proud products onto retailers shelves.
- The KY Proud Expo in Northern KY was the best thing Allied has done for us. It got us in front of retailers we would not have met other wise. I followed up with the people I met and got some new customers.

- John Morris of Allied has been very helpful with ideas for new product and with introductions to new customers. About one third of my sales are from business I landed with help from John Morris.
- Logistics is a major problem for KY producers. Someone who sells \$50,000 or less of KY products can not afford to set-up a whole distribution system on their own. Allied was suppose to help with this. They have not.
- I am paying an arm and a leg for transportation. There is no central distribution point, I am paying both ways, hauling products to customers and hauling raw materials to my plant for processing.
- Rebekah Grace Company (RG) is the only distribution/logistics solution offered to producers.
- “What Allied has done for Rebekah Grace was what I thought they were supposed to do for us. Instead they are pushing producers into sales through RG. This is a conflict of interest. Five different attendees of the meeting stated they think Allied has a conflict of interest and is pushing the Rebekah Grace label ahead of producer owned labels.
- The RG Company asked for a lower price than what I was selling for. Allied brokers the deal and charges a 5% commission.
- RG is developing a line of pasture raised natural eggs. They are offering farmers too small a price to be profitable and they will be directly competing with the eggs I am producing and selling now.
- What benefit is Allied providing to those that want to preserve their own brand identity?
- We are selling local tomatoes in our box and labeled as Kentucky Proud. Allied Food Marketers wanted us to pack local tomatoes under the Rebekah Grace label. RG would charge us a sales commission. Allied is not promoting KY Proud, but RG instead. This is a conflict of interest from what they are being paid by the state to do.
- There needs to be clear expectations and accountability built into Allied contract.

Model Expert Meetings

Hillary Boone Center—July 28, 2008

UK Model Evaluation Team:

Dr. Gary Palmer, Paul Deaton, Josh Renaker

Invitees in attendance:

Gayle Arnold—Montgomery Co. Farmer, Ag Advisory Council President

Ken Andries—KSU Small Ruminant Specialist

Jarod Barkley—Monroe Co. Farmer

Kenny Burdine —UK Ag Economics

Chuck Crutcher—Hardin Co. Farmer

Gary Carter—Harrison Co. Extension

Ron Catchen—Montgomery Co. Agent

Paul Deaton—Ag Programs
William Fritz—Harrison Co. Farmer
Gary Hamilton—Bath Co. Agent
Kevin Horn—Ag Programs
Terry Hutchens—UK Extension Goat Associate
Todd Harp—GOAP
Jerry Little—Boyle County Agent
Kevin Lyons—Monroe Co. Agent
Steve Moore—Henry Co. Agent
Doug Overhults—UK Livestock Facilities Specialist
Gary Palmer—Ag Programs
Josh Renaker—Ag Programs
Doug Shepherd—Hardin Co. Agent
Don Sorrell—Campbell Co. Agent
Greg Sloan—Boyle Co. Farmer, County Council
Kylee Smith —GOAP
Ray Smith—UK Forage Specialist

Major Model Programs

- Cattle Handling Facilities Program
- Cattle Genetics Improvement Program
- Forage Improvement and Utilization Program
- Hay, Straw and Commodity Storage Program

Ag Diversification Programs

- Agri-tourism
- Aquaculture
- Certified/Commercial Kitchen
- Direct to Consumer Livestock
- Equine
- Fruit Sorghum
- Greenhouse Conversion/Construction
- Honeybees
- Ornamental Horticulture
- Poultry - Pastured / Other Fowl
- Rabbit
- Vegetable, Mushroom, Herb
- Sod
- Commercial Poultry Program
- Dairy Diversification Program
- Goat Sheep Diversification Program

- Swine Diversification Program

Other

- Farm Livestock Fencing Improvement Program
- On-farm Water Enhancement Program
- Shared-Use Equipment Program
- Technology Program
- Timber Production, Utilization and Marketing Program

Agricultural Agents Focus Group

UK Model Evaluation Team:

Gary Palmer, Ricky Yeargan, Paul Deaton, Josh Renaker

Invitees in Attendance:

Kevin Horn—Model State Review Team: UK Ag Programs

Gary Carter—UK ANR Agent Harrison County

Dan Grigson—UK ANR Agent Lincoln County

Patrick Hardesty—UK ANR Agent Taylor County

Jerry Little—UK ANR Agent Boyle County

Kevin Lyons—UK ANR Agent Monroe County

Glenn Mackie—UK ANR Agent Bourbon County

James Mansfield—Non-model State Review Team

Steve Moore—UK ANR Agent Henry County

Bill Peterson—UK ANR Agent Mason County

Brandon Sears—UK ANR Agent Madison County

Jeffery Smith—UK ANR Agent Fleming County

Don Sorrell—UK ANR Agent Campbell County

Gary Tilghman—UK ANR Agent Barren County

Experts Consulted

Darrh Bullock—Beef Production, UK Animal & Food Sciences

Kenny Burdine—Beef Economics, UK Agricultural Economics

Roy Burris—Beef Production, UK Animal & Food Sciences

Louise Cook—Executive Director KY Veterinary Medical Association

Sam McNeill—Processing and Storage , Biosystems & Agricultural Engineering

Doug Overhults—Facilities and Fencing, Biosystems & Agricultural Engineering

Bob Sand—Owner of The Beef Connection

Ray Smith—Forage Production, UK Plant & Soil Sciences

Tim Stombaugh—Precision Agriculture, Biosystems & Agricultural Engineering

Forest Wynne—Aquaculture, Kentucky State University

Kentucky Agricultural Finance Corporation Expert Meeting Notes

UK Student Center Board Room—August 28, 2008

Attendees other than the ADF Evaluation Team included:

Mr. Chris Cooper — Loan Officer, Central Kentucky Agricultural Credit Association
Mr. Michael Duckworth — VP Agriculture Lending, Citizens Commerce Bank
Mr. Tony Harrington — President, Community Farm Alliance
Ms. Carol Hinton — Agriculture Extension Agent, Breckinridge County
Mr. Richard Whitis - Agriculture Extension Agent, Pulaski County
Mr. Mac Stone — Executive Director of Marketing, KY Dept. of Agriculture
Mr. Larry Snell — Executive Director, KY Center for Agriculture Rural Development
Mr. Paul Deaton — Extension Specialist, University of Kentucky
Mr. Curtis Mahnken — KY Farm Business Management Association

The meeting started with introductions by the attendees. Then Dr. Infanger presented an overview of the ADF evaluation project and our research concerning the KAFC. Dr. Maurer then led a discussion on various aspects of the KAFC.

Most of the participants became aware of the KFDC loan programs either from presentations given by the staff from the Governors Office of Agricultural Policy at professional meetings or from board meetings of the Agricultural Development Board. Participants generally agreed with the premise that farmers are learning about the programs from bankers and other agricultural lenders. It is typical that agricultural lenders approach the farmer about potential KAFC loans opportunities and not the other way around. One participant questioned whether the programs were widely known among farmers because KAFC has only 218 loans out at this point in time compared to 84,000 farms in Kentucky. However, it was noted that the KAFC has been involved with expanded lending based on ADF funding for only two years. After some general comments from participants there was a discussion about the positive and negatives aspects of the four KAFC loan programs.

Agricultural Infrastructure Loan Program

- Simplest program to apply for
- Guidelines are straight forward and simple to underwrite
- The lower “blended” interest rates are a major incentive and have encouraged some people to borrow the money sooner or to build a little bigger barn
- 80% of borrowers said they could have borrowed the money elsewhere
- 44% of the total KAFC loan funds have gone into this program and most loans have funded either new tobacco barns or grain bins

Beginning Farmer Loan Program

- Very helpful program
- These are high risk loans, so most agricultural lenders couldnt do them without KAFC participation

- Loaning beginning farmers down payment money helps “make the loan” and reduces the participating banks risk
- KAFC should have used the Farm Service Agency guidelines for defining a beginning farmer
- KAFCs requirement of at least 3 years but less than 10 years farm experience leaves out the children who have farmed with their parents for more than 10 years
- Should have a “first time land purchase” program, not a beginning farmer program
- “KAFC low interest rates may be inflating farmland prices by providing a subsidy to new buyers”
- 12% of the total KAFC loan funds have gone into this program

Agricultural Processing Loan Program

- These have been direct loans from the KAFC
- No comments as participants had no experience with these loans

Coordinated Value-added Assistance Loan Program

- The one loan made has been a direct loan from the KAFC
- UK Evaluation team could not reveal any details due to privacy concerns from only one loan
- The same concept has been applied to agri-tourism and non-model forgivable loans and has been successful. The problem is the non-model reporting requirements to document the purchases of Kentucky grown products are over bearing.

Comments about the KAFC program in general:

- KAFC is easy, straight forward but they should stream line the process for loans under \$50,000. Let lenders qualify the borrowers for loans of \$50K or less, that would make it more attractive for them to make \$10 \$30K loans.
- KAFC loans are going to mostly traditional agriculture businesses, what about new ventures and value-added enterprises?
- The ADB should get rid of “forgivable loans”. Instead they should offer a grant and combine it with a loan and extended repayment terms.
- Why does the KAFC board want to talk face to face with some of the applicants? KAFC needs a loan review process that is beyond reproach. Maybe they need a standing loan review committee.
- A 2-3% reduction in interest rates on a loan is not going to make or break a farming operation. Why is the money invested in KAFC helping only 218 farmers? Is that an effective use of state funds?
- It is risky using money set aside to diversify Kentucky agriculture to build tobacco barns.
- KAFC is not as effective as the model and non-model programs because there is little risk abatement on activities designed to encourage agricultural diversification. We need a way to take some of the risk out of starting new ventures.
- “If one third of the KAFC loans are not going belly up then KAFC is not reducing risk for diversified efforts and new ventures.”

- “Before the ADF you would not have been able to finance agritourism ventures and value-added venture such as ice cream or wineries.”
- “KAFC has put the advertising burden on the lenders. KAFC needs to promote their programs to farmers, tell them what they have to offer”.
- “Model programs are wildly successful, other programs such as the non-model project grants/loans and KAFC are not widely known. Its become blurred as to what is available and where ADF, KAFC. County Councils?”

New Loan Program Ideas:

- Operating loans
- Equipment loans
- Lender qualified smaller loans ;\$50K
- Loan guarantees of up to 90% for more risky ventures
- Incubator or micro-loans for new ventures and beginning farmers
- Livestock loans \$50K - \$100K

Appendix D

Consultant reports

Evaluation of Impacts of Kentucky Proud

Dr. Harry M. Kaiser, Cornell University

This report provides an independent examination of the marketing effort by the state of Kentucky to promote their agricultural and food products. Specifically, the analysis pertains to two large grants for this effort:

1. \$5.329 million grant awarded to the Kentucky Department of Agricultural in July 2004 (\$2.021 million) and September 2006 (\$3.308 million), and
2. \$4.892 million grant awarded to Allied Food Marketers West in May 2005 (\$2.992 million) and December 2006 (\$1.9 million).

These resources have been used to promote and brand locally grown agricultural and food products in Kentucky under the “KY Proud” campaign theme. I was asked to address three important issues regarding these marketing efforts:

1. How does the Kentucky marketing program compare to what other states are doing in terms of a state branding and promotional effort?
2. What evidence does the research literature provide on the economic impacts of state promotional efforts similar to KY Proud?
3. Based on the results of previous research, what are the economic impacts and returns to KY Proud?

Ideally, for Item 3, it would be superior to conduct an overall economic evaluation for KY Proud based on data generated specific to this marketing program. However, such an effort would take at least 6-8 months to complete. So the approach taken here is to survey the research on what researchers have found for similar types of programs and activities, and transpose these results to project the overall impact of the Kentucky marketing programs.

How does the Kentucky Program Compare to Other State Programs?

State branding programs for agricultural and food products has become extremely popular in the United States. As of 2001, as depicted in Table D.2, 43 states had adopted various forms of these branding programs (FERENCE, Weicker and Co.). Here is an overview of some of the state programs.

Jersey Fresh

The Jersey Fresh program was established by the New Jersey Department of Agriculture in 1984, and is one of the oldest of the state branding programs. The overall purpose is to promote state grown fruits and vegetables in order to increase the profitability of New Jersey farms, and maintain the sustainability of the state's agricultural sector. The first year budget for this program was \$325,000, but now is over \$1.2 million. This money is used to advertise (billboard, radio, and television), conduct consumer education, and public relations under the banner of "Jersey Fresh" to promote New Jersey grown fruits and vegetables. The Jersey Fresh logo is used as the basis for the overall campaign, which also includes promotional events such as fairs, trade shows, cooking competitions, and in-store cooking demonstrations (Govindasamy, Italia, and Thatch).

Arizona Grown

Another program that has conducted an economic evaluation is "Arizona Grown." The goal of this program is to make it easier for consumers, retailers and restaurants to identify and purchase Arizona products. The Arizona Grown logo may be used to promote any food or agricultural item that has been grown, raised or processed in Arizona. To use the logo, companies must submit a license agreement verifying their eligibility and agreeing to comply with the Logo Use. There is no cost to participate in the program however shipping costs will be charged. Logo slicks and digital art are provided at no cost to the company and packaging materials and promotional items will be available at the cost of production. Retailers and restaurants are encouraged to use these logos to promote Arizona products to their customers. The logos may only be used to promote Arizona products. Companies may incorporate the logo into their packaging design using camera-ready or digital artwork; or they may purchase labels to attach to packages, shipping boxes, or directly to produce items.

This program is much smaller than Jersey Fresh, and was launched in 1997 with an initial budget of \$50,000 (\$25,000 from the state, and \$25,000 in matching money from the agricultural sector). In 1998, that figure increased to \$100,000 from the state and industry.

Grown in Georgia

This is a campaign that emphasizes the local and fresh nature of fruits and vegetables grown in Georgia. In 2000, a promotional campaign with supermarkets was launched that cost \$100,000. In Table D.2, the budget for this program is listed at \$2.3 million, but that is probably for the life of the program. This program is very similar to Jersey Fresh.

From the Heart of Washington

This program is basically a public relations campaign to promote agricultural and food products in the state of Washington. The program was initiated in 2001, and was organized by the Washington Department of Agriculture in conjunction with industry leaders. It expanded in 2006 with a \$200,000 campaign entitled, “Did you know?” The campaign includes television and radio advertising, and a Web site that supports 450 store locations posting signage and shelf talkers. The point-of-purchase materials feature the HOW logo and the tag line “Our farms to your table.”

State lawmakers recently allocated \$200,000–\$400,000 per year - for the From the Heart of Washington campaign. This follows up on the three-year \$2.5 million federal grant the campaign received in 2002.

Louisiana

Louisiana has developed a number of logos and labels to identify authentic Louisiana products. These include “Certified Product of Louisiana”, “Certified Cajun Product of Louisiana” or ‘Certified Creole Product of Louisiana”. Companies that produce or process products in the state can use the logos and also are listed in a Louisiana Agricultural Products Directory.

Various boards promote commodities under these labels. They include:

- Louisiana Catfish Promotion and Research Board,
- Louisiana Crawfish Promotion and Research Board,
- Louisiana Rice Promotion Board,
- Louisiana Soybean and Grain Research and Promotion Board, and
- Louisiana Strawberry Marketing Board.

To counteract rising catfish imports, Louisiana has begun an American catfish awareness campaign that provides logos to restaurants to indicate that the catfish is “100 percent All American Catfish.”

Connecticut Grown

The Connecticut Grown Program is an ongoing initiative to increase the demand for Connecticut products in the region and outside the region. The main program objectives are:

- Pinpoint Connecticut agriculture’s strengths with respect to its economy and geographic location;
- Continue to increase the consumer awareness by using the “Connecticut Grown” logo;
- Establish the meaning and substance of the Connecticut Grown program;
- Educate and inform consumers concerning Connecticut farm products and methods of production;

- Establish criteria and information aimed at enabling existing agri-business to expand their operations.

The initiative incorporates a variety of projects including the following:

- Agriculture Directional Signage;
- Point-of-Purchase Materials;
- Joint Venture program;
- Food shows and expositions;
- Farm City exhibits;
- Apple Marketing project;
- Farmers Markets;
- Fruit and Vegetable Quality Assurance;
- Corporate and Restaurants promotions;
- Agricultural commodity;
- Quality Seals;
- Publications and Media relations;
- Community Gardens.

Illinois Product

Since 1987, the Illinois Department of Agriculture's (IDOA) Illinois Products Logo Program has identified Illinois products in retail establishments. The registered trademark is available to any Illinois food or agribusiness-related company located in the state. There are over 470 food and agribusiness companies utilizing the Illinois products logo in an effort to enhance customer awareness.

There is no cost to using the logo. Although there are no requirements to use a certain percentage of state-produced ingredients, the IDOA encourages the use of in-state resources. The Bureau of Marketing and Promotion supports the marketing efforts with a variety of educational and promotional projects including retail displays, food service, special events, industry trade shows, and state fair exhibits. The ILLINOIS PRODUCT logo can be used by:

- Food Companies;
- Agricultural Organizations;
- Fruit and Vegetable Growers;
- Christmas tree growers;
- Seed, Fertilizer Companies;
- Agricultural Equipment Manufacturers;
- Agricultural producers; and
- Agribusiness Companies

Economic Impacts of State Branding Programs: A Review of the Literature

The most comprehensive research that I found on the economic impacts of these programs has been done by Rutgers University of the "Jersey Fresh" program. Agricultural economists from Rutgers University have conducted several studies on the Jersey Fresh program. One economic

study found that this program increased the demand for New Jersey grown products by 5.5% (Adeleja, Nayga, and Schilling). This study also estimated a rate of return to this program of 15.20, i.e., every dollar invested in this program returned \$15.20 to net farm income in the state. While this figure is on the high side of what is typically estimated for generic advertising and promotion (see later section for details), it nonetheless indicates that state branding can be quite an effective means to support state agricultural producers. This study also found that the total impact of Jersey Fresh on the entire agricultural and food industry in the state had a rate of return of 46.9, i.e., each dollar invested in Jersey Fresh returned \$46.90 to the state's agricultural and food industry.

In a report on the consumer awareness of the Jersey Fresh program, Govindasamy, Italia, and Thatch found:

- The majority of consumers (96%) reported that they would find Jersey Fresh logos useful in identifying and selecting New Jersey produce;
- The majority of the consumers (64%) indicated that they would like to buy more state produce;
- A high percentage of consumers were likely to increase their purchases if they saw the logos on the produce;
- A majority (79%) indicated that they would occasionally consider changing their usual supermarket in order to be able to purchase Jersey Fresh produce;
- Over 87% also said they would prefer the grocery store in their local area to have a greater selection of Jersey Fresh produce;
- 75% of the participants were willing to pay a premium to purchase Jersey Fresh produce; and
- 47% indicated that they would consider paying between 1% to 5% over the market price.

Agricultural economists from Arizona State University conducted a study of the Arizona Grown program in 1998 (Patterson, Olofsson, Richards, and Sass). While they did not compute a rate of return for this program, they did conduct a market experiment by comparing the sales of stores using the Arizona Grown point of purchase promotion materials with stores not using it. The findings of this study included:

- 2 out of 12 fruits and vegetable products had higher sales in stores using Arizona Grown POP materials (iceberg and red leaf lettuce).
- The remaining 10 fruit and vegetable products did not have higher sales due to this marketing effort.
- 25% of consumers were aware of the Arizona Grown program.
- 76% indicated a preference to purchase Arizona grown commodities.

The authors noted that these results were similar to the Jersey Fresh program findings.

Wolfe and McKissick, from the University of Georgia, conducted a study on a \$100,000 promotional campaign for "Grown in Georgia." This study relied on store-level data over a six-week period from Kroger supermarket, which was an active participant in the promotional effort.

The authors compared produce sales from stores in Georgia (160 using the campaign) compared with stores in South Carolina (13 not using the campaign) and Alabama (3 not using the campaign). They found the campaign to be effective in increasing sales of Georgia produce. For instance, the Georgia stores experiences a 10% increase in total produce sales from 2000 to 2001 for the campaign period compared with only a 0.39% increase in Georgia and Alabama. The authors estimated a benefit-cost ratio between 4.37 and 7.37 in terms of generating additional revenue to the stores due to the program. In addition the authors found:

- 94% of shoppers would purchase local product if it was of similar price and quality;
- a significant number of shoppers would switch stores to purchase local produce;
- 61% said in store displays influenced their purchase decisions.

The Ference, Weicker and Co. report summarized the impacts from previous research on the other state programs. Here is a brief synopsis.

A 2005 study on the states of Vermont, New Hampshire and Maine indicated that size of the premium consumers were willing to pay depended on price and origin. Most studies indicated that given a choice consumers would prefer to buy local produce which they expect to be fresher and/or of higher quality.

Pilot projects in Iowa have indicated that chefs and food service managers are willing to purchase local food items over lower-priced imported food due to considerations of quality, taste, and local community considerations.

The Leopold Center for Sustainable Agriculture in Iowa did an extensive survey of consumers in a study called “Consumer Perceptions of Place-based Foods, Food Chain Profit Distribution, and Family Farms.” The results of this survey were as follows:

- Respondents are more likely to choose a local food product that offers clear economic benefits to the farmers who grew the product and the community that supported the farmer than a food product that does not deliver significant economic benefits to the local economy;
- A majority of respondents would like to see farmers receive a higher share of the profits for retail food products relative to other partners in the food chain (processors, distributors, and retailers);
- A majority of respondents believed it be at least somewhat likely that the taste and quality of meat, produce, and dairy products are influenced by the natural resource characteristics of the region where the products were grown;
- Respondents are more likely to pay amounts above the conventional price for place-based food products grown in their state than for those place-based food products grown outside of their state; and
- Respondents were most likely to view family farms as those where family members provided labor and made management decisions, farms whose revenue was a primary source of income, and farms that used conservation practices.

A 2006 poll for the “Pride of Dakota” program, conducted by the Bureau of Governmental Affairs at the University of North Dakota with consumers in the state of North Dakota, found that:

- 79% of people would be more likely to purchase a product if produced locally;
- 52% of people are willing to pay a premium from 1 to 10% for local food;
- 14% are willing to pay a premium from 11 to 20%;
- 4% would pay more than 20%; and
- 28% would not pay a premium.

Other local branding campaign results include:

- A Kansas City campaign has tracked a 36% increase in local food sales for the Good Nutured Family Farmers Cooperative selling through a group of locally owned and operated supermarkets in the Kansas City metro area since 2004;
- A Northeast Iowa campaign has doubled local food purchases among twenty three institutional buyers, including hospitals, retirement homes, restaurants, grocers, and colleges;
- A Maine study indicates that shifting just 1% of consumer expenditures to direct purchasing of local food products could increase farmers' income in that state by as much as 5%; and
- The "Go Texas" campaign analysis indicated that the program had a positive impact on 77% of member businesses.

In summary, it is clear that the research evidence indicates that state branding programs have positive impacts on the market in terms of increased sales for food and agricultural products.

Economic Evaluation of KY Proud

The economic evaluation that follows focuses on the potential impacts and returns of KY Proud. Three approaches are used, and hence three estimates are made, and I will identify the one that I believe is the best.

Approach 1 is the simplest. This approach is based on the rate of return estimate that have been found for similar programs. Only two programs, Jersey Fresh and Grown in Georgia, have had studies that estimated their rates of return. Recall that Jersey Fresh had a very high rate of return estimated by Rutgers University economists, which was 15.2 in terms of farm income, and 46.9 for total impact on all agriculture and food sector. These estimates appear implausibly high, and therefore I am not going to use them in estimating the economic returns to KY Proud.

The rate of return estimated for the Grown in Georgia program is 5.87 (average of 4.37 and 7.37). This is a gross return to grocery store revenue rather than farm revenue. That is, every dollar invested in this program returned \$5.87 in grocery store gross revenue. It is gross revenue rather than net revenue to grocery stores because the costs of the incremental products being sold due to the promotional program are not netted out.

If we assume an identical rate of return as that found for the Georgia program, that would imply that the total investment in the Kentucky marketing programs since 2004 (i.e., \$10.221 million from the grants to the Kentucky Department of Agriculture and Allied Food Marketers West) generated \$60 million in additional gross sales revenue to the state. One problem with this

estimate is that it does not indicate how the state's agricultural producers were impacted by the program. Hence, this is the least preferable estimate of the three approaches.

Approach 2 uses the results of a recent comprehensive study done by Global Insight, Inc. for USDA/FAS on U.S. agricultural export promotion programs and translates them to the KY Proud program. This makes quite a bit of sense because the collective activities in U.S. export promotion are very similar to those used by the Kentucky programs. For example, in looking at all of the U.S. export promotion programs, the following activities have been, which have also been used by KY Proud: print, television, radio, and outdoor advertising; websites; trade shows, technical service, public relations, sponsorships, food service promotions, point of purchases campaigns, and other promotions. Moreover, one of the main purposes of U.S. export promotion programs is to brand U.S. agricultural and food commodities. This is precisely what KY Proud's purpose is at the state-level. Furthermore, in this study, a broader benefit-cost ratio (a.k.a. rate of return) was also computed that includes economy-wide effects of the promotion (e.g., agricultural and non-agricultural effects). Hence, this, in my opinion, may be the best comparable rate of return for KY Proud.

This study found a rate of return to the entire U.S. economy (agricultural and non-agricultural) from U.S. export promotion equal to 5.2. That is, each dollar invested in U.S. export promotion returned \$5.20 in terms of total U.S. net economic welfare (net economic welfare can be interpreted as net benefits to the economy). Assuming an identical rate of return as that found for all U.S. export promotion programs, that would imply the Kentucky marketing programs since 2004 generated \$53.1 million in economic welfare to the state of Kentucky.

In terms of impact on net farm income, this study found a rate of return equal to 2.89. That is, every dollar invested in U.S. export promotion returned \$2.89 to net cash income of farmers. Applying this figure to the Kentucky program implies that KY Proud produced an additional \$29.54 million in net cash income to the state (note that the \$29.54 million is included in the \$53.1 million for the entire economy-wide impact).

Approach 3 is to rely on estimated rates of return for various marketing activities, and apply each of those to the same types of activities used in KY Proud. Table D.1 presents the estimated rates of return for various generic advertising and promotion found by selected previous studies. As is evident from this table, the majority of studies have been conducted on generic advertising activities. The average rate of return from the 13 studies listed in Table D.1 is 4.87, i.e., each dollar invested in generic advertising returns \$4.87 in net farm revenue. From this table, it is evident that generic advertising results in the highest rate of return of all activities. The six studies on non-advertising promotional activities had an average rate of return of 2.73. The three studies listed in Table D.1 that evaluated nutritional education programs have an average rate of return of 2.75. Finally, the one study that examined the effectiveness of technical assistance in export promotion computed an average rate of return of 2.35 for this activity.

An overall average rate of return for the KY Proud marketing activities can be estimated by computing a weighted average of these rates of return, where the weights are equal to the expenditures on each of these activities. Based on the data provided by the Kentucky Department of Agriculture and Allied Food Marketers West, their expenditures were categorized by activity as follows:

Table D.1: *Expenditures by activity for the Kentucky Department of Agriculture and Allied Food Marketers West.*

Kentucky Department of Agriculture	
Activity	Percent of Expenditures
Advertising	89.7%
Promotion	10.3%
Total	100%
Allied Food Marketers West	
Activity	Percent of Expenditures
Advertising	4.7%
Promotion	39.8%
Technical assistance	55.5%
Total	100%
Combined Programs	
Activity	Percent of Expenditures
Advertising	22.9%
Promotion	46.5%
Technical assistance	30.6%
Total	100%

Based on these budget percentages, the weighted average rate of return for the Kentucky Department of Agriculture based on rates of return in Table D.1 is 4.65. Based on these budget percentages, the weighted average rate of return for Allied Food Marketers West based on rates of return in Table D.1 is 2.62. Based on these budget percentages, the weighted average rate of return for both organizations combined based on rates of return in Table D.1 is 3.39.

If we use the 3.39 rate of return, that would imply that the total investment in the Kentucky marketing programs since 2004 (i.e., \$10.221 million from the grants to the Kentucky Department of Agriculture and Allied Food Marketers West) generated \$34.65 million in additional net farm income.

Summary

This report addressed three important issues regarding the marketing efforts of KY Proud:

1. How does the Kentucky marketing program compare to what other states are doing in terms of a state branding and promotional effort?
2. What evidence does the research literature provide on the economic impacts of state promotional efforts similar to “KY Proud”?
3. Based on the results of previous research, what are the economic impacts and returns to KY Proud?

The review of the literature indicated that state branding of food and agricultural commodities has become very popular in the United States. 43 states currently use these type of marketing activities. The KY Proud program looks quite similar to the majority of program that use advertising, labeling, sponsorships, public relations, nutritional education, and other promotional activities to promote local products.

The studies that were reviewed clearly indicate that state branding is an effective way to increase sales of local products. All of the studies that estimated economic impacts demonstrated sizable sales impacts. The two studies that estimated a rate of return demonstrated that the benefits outweigh the costs.

Based on the approaches I used to estimate the economic return of KY Proud assuming it had the same impacts as similar programs, my best estimate is that the impacts in Approach 2 and 3 are the most plausible. If this is true, KY Proud has had a positive and significant impact on both the agricultural and overall economy of Kentucky. In terms of economy-wide impacts, it was estimated that the total investment of \$10.221 million between 2004 and 2006 returned \$53.1 million. In terms of the agricultural sector, this investment returned \$29.54 million in net farm revenue. Approach 3, which assumes similar returns as those found for generic advertising, promotion, and technical assistance, indicates almost an identical number of \$34.65 million in additional net farm revenue.

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Table D.2: *U.S. state branding programs.*

State	Program Name or Slogan(s)	Year Established	Budget(\$)	Budget Period
Alabama	A+ Alabama: Best Buy	2001	500,137*	2003
Alaska	Alaska Grown, Fresher By Far	2001	295,000	2003
Arizona	Arizona Grown	1993	n/a	n/a
Arkansas	Arkansas Grown	1997	100,000	1998
California	Be Californian, Buy California Grown	2001	25,500,000*	2003
Colorado	Colorado Proud	1999	n/a	n/a
Connecticut	Connecticut Grown	n/a	n/a	n/a
Florida	Fresh from Florida	1990	500,000*	2003
Georgia	Georgia Grown	n/a	2,351,133*	2003
Hawaii	Island Fresh	n/a	n/a	n/a
Idaho	Grown in Idaho, Idaho Preferred	n/a	650,000*	2002
Illinois	Illinois Product	1988	n/a	n/a
Kentucky	Kentucky Fresh, Kentucky Proud	2001	800,000	2004-2006
Louisiana	Buy Fresh, Buy Local	2001	n/a	n/a
Maine	Get Real, Get Maine	n/a	250,000, 150,000	2002-04
Maryland	Maryland's Best	2001	n/a	n/a
Massachusetts	Massachusetts Grown...and Fresher!	n/a	n/a	n/a
Michigan	Select a Taste of Michigan	2003	200,000*	2003
Mississippi	Make Mine Mississippi	1999	n/a	n/a
Missouri	Buy Missouri, AgriMissouri	1985	115,000*	2003
Montana	Montana's Choice	n/a	8,300*	2003
Nebraska	Nebraska Our Best to You	2004	n/a	n/a
Nevada	Nevada Grown	2002	n/a	n/a
New Hampshire	New Hampshire's Own	1997	128,291*	2003
New Jersey	Jersey Fresh	1983	826,000	2003
New Mexico	Taste the Tradition	n/a	n/a	n/a
New York	Pride of New York	1985	n/a	n/a
North Carolina	Got to be NC	n/a	n/a	n/a
North Dakota	Pride of Dakota	1985	n/a	n/a
Ohio	Ohio Proud	1993	n/a	n/a
Oklahoma	Made in Oklahoma	n/a	n/a	n/a
Pennsylvania	Pennsylvania Preferred	n/a	295,000	2002
Rhode Island	Rhode Island Grown: Take Some Home	n/a	n/a	n/a
South Carolina	South Carolina Quality	1992	n/a	n/a
Tennessee	Pick Tennessee Products	n/a	500,000*	2003
Texas	Go Texan	1999	400,000	2004
Utah	Utah's Own	2002	n/a	n/a
Vermont	Vermont Seal of Quality	n/a	75,000*	2003
Virginia	Virginia's Finest, Virginia Grown	1989	511,500*	2003
Washington	From the Heart of Washington	2001	2,500,000*, 400,000	2001-03, 2004
West Virginia	West Virginia Grown	1987	n/a	n/a
Wisconsin	Something Special from Wisconsin	1983	n/a	n/a

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Table D.3: *Rates of Return Estimated for Various Generic Advertising and Promotional Activities.*

Commodity	Region Covered	Rate of Return	Study
Commodity advertising:			
Fluid milk	New York State	2.94	Zheng and Kaiser 2007
Butter	Canada	1.00	Goddard and Amuah 1989
Cheese	Canada	8.30	Kaiser et al. 2007
All dairy	United States	3.40	Kaiser 1997
Beef	United States	5.80	Ward 1998
Pork	United States	4.80	Davis et al. 2001
Eggs	United States	6.00	Kaiser 2006
Almonds	United States	5.00	Crespi and Sexton 2001
Fresh cut flowers	United States	5.62	Ward 1997
Washington Apples	United States	7.00	Ward and Forker 1991
Florida orange juice	United States	4.50	Capps et al. 2003
California eggs	California	6.90	Schmit et al 1997
Australian wool	United States	2.00	Dewbre et al. 1987
Average		4.87	
Standard deviation		2.09	
Nonadvertising, promotion:			
Fluid milk	New York State	1.72	Zheng and Kaiser 2007
Avocados	United States	2.20	Carman and Craft 2005
Walnuts	United States	5.68	Kaiser 2005
Cotton	United States	3.40	Nichols et al. 1997
Onions	United States	1.00	Gopinath&Cornelius 2000
California tree fruit	United States	2.40	Freed et al. 1998
Average		2.73	
Standard deviation		1.65	

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Evaluation of Farmers Markets Funded through the Kentucky Agricultural Development Fund

Laura Powers, Extension Specialist

Since 2001, the Kentucky Agricultural Development Fund (ADF) has invested \$3,274,194 into farmers markets located in 44 Kentucky counties. Most of the counties have only one market, but two counties have received funding for two different farmers markets. The accompanying map shows the counties that have received ADF and relatively how much funding each county received.

As shown in the map below, the funds have been widely distributed across the Commonwealth (funds per county as of spring-2008).

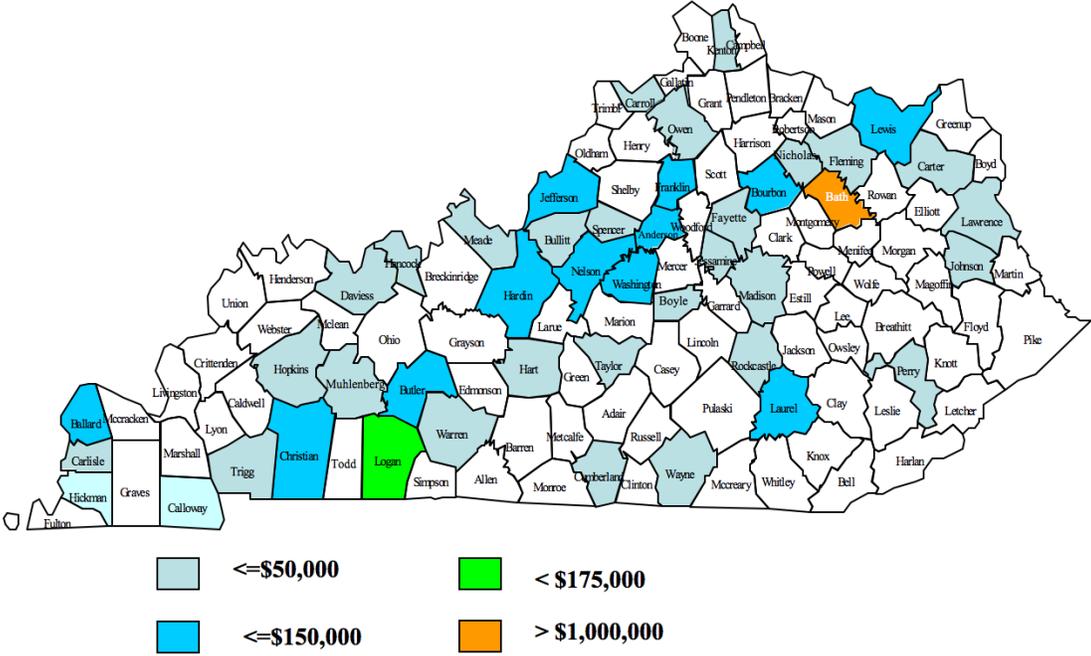


Figure D.1: Distribution of ADF Farmers' Market Funding 2001–2006.

The evaluation process into the use of these funds was initially conducted through a survey. This survey was developed and mailed to the county extension agent (the Horticulture Agent if available, otherwise the Agriculture and Natural Resources Agent) in each county that had a farmers market that received ADF. Some of these surveys were forwarded on to representatives of the farmers markets. Fourteen of the surveys were completed and returned.

The remainder of the data for this evaluation was generated through follow up phone calls to the county extension agents or other representatives of the farmers markets. The data collected through this process was more limited than the original survey, but an additional ten counties provided responses to the selected questions. Overall, of the 24 returned surveys, only two were completed by a member of the Farmers Market. The remainder was completed by the respective County Extension Agent (either the Agriculture and Natural Resources Agent or Horticulture Agent). The table below outlines the various grant sizes to the funded farmers markets.

While the data collection techniques accounted for only 55% of the total funded farmers markets, 77.3% of the funds were accounted for in the survey. The one farmers market that received \$1.52 million accounted for 46.4% of the entire farmer market funding.

Nineteen of the 24 respondents used the funds to build a permanent farmers market structure. Two listed advertising and promotion as the main purpose of the study, one used the funds

Table D.4: *Farmer's market grants.*

Grant Awarded	Total Value in Category	Number in Grant Awarded	Number of Surveys Returned Per Category	Value of Returned Surveys
\$10,000	\$63,296	14	4	\$ 25,000
\$50,000	\$399,198	16	12	\$ 270,996
\$100,000	\$418,200	6	3	\$ 178,200
\$175,000	\$873,500	7	4	\$ 538,000
\$1,000,000	\$1,520,000	1	1	\$ 1,520,000
Total	\$3,274,194	44	24	\$ 2,532,196

for temporary shelter, one used funds for renovations and upgrades to an existing facility and one to conduct a feasibility structure. The purpose of the feasibility study was to examine the feasibility in building a permanent structure to how an existing farmers market that includes 65 members. Three of the respondents have not yet used the funds; only one of these has not begun operations.

There were only twelve farmers markets that provided their estimated annual sales. According to these twelve, their total annual sales are \$3.074 million for the most recent marketing year. However there were two markets that accounted for \$2.75 million of this total. The two markets with annual sales of \$2.75 million received a total of \$15,000 from the ADF. For these two markets, each ADF dollar represented \$177 in sales. The remaining ten markets reported annual sales of \$324,000 and received approximately \$1.85 million in ADF. For these 10 markets, each ADF dollar represented \$0.17 in sales. Removing the one market that received over \$1.0 million of ADF from the analysis results in the remaining 9 markets with reported \$0.84 of sales for each ADF dollar received.

Of the 24 respondents, twenty provided membership information. Two of the twenty did not know what the membership of the market was when it was first opened. The remaining eighteen markets reported a total farmers market membership of 228. For the upcoming market year, these same eighteen markets reported 483 members, representing a 112% increase. Some of these markets have been open only a few years, while some have been open as long as 30 years. Three of the markets reported decreased membership over the years they have been in existence. One of the three of these markets reported that the decline in membership was a result of the markets decreased allotment of coupons for the elderly.

The products sold at these 24 Kentucky farmers markets are as diverse as the state itself. All of these markets sold the standard vegetable variety (corn, tomatoes, squash, zucchini, and so on). Most of the markets also sold value-added items such as jams, jellies and breads. Homemade crafts, wood working products and quilts were also listed as items for sale. Although not all of the markets were specifically asked this question, many of them also comments on their markets emphasis on Kentucky only products.

Of the fourteen respondents completing the original survey, all of them responded that they either agreed or strongly agreed that the ADF were critical to starting their project and that the project would continue after the end of the ADF. All but two responded that they were able to leverage other funds through the use of the ADF. One of the respondents that disagreed applied for and received funds for the ADF feasibility program and no other funding were required.

Overall, the use of ADF for farmers markets has provided a positive impact on Kentucky agriculture. Although the ratio of ADF dollar to sales is low for many of them, the purpose of the ADF funds were not provided as a typical investment from which a return is expected. These funds have encouraged growth in products available and have provided a consistent area that customers can come to and know that the farmers market will always be there.

A Review of the Agricultural Development Board Investments in Cooperatives

Laura Powers, Extension Specialist

In the early days of the Agricultural Development Board (ADB), it was decided that funding cooperatives would be an efficient and effective method for impacting multiple farmers with each project. Cooperatives are a form of business organization in which the owners of the business are those that are in need of that business services. Generally, cooperatives are formed when there is an absence in the marketplace for a particular service. Those in need of that service will pool their resources to fill the void. In the case of the ADB funded cooperatives, farmers were looking for new business opportunities that would either compliment current enterprises or supplement income from losses in tobacco production.

Within a six year time period, the ADB invested \$10.1 million dollars (combination of state and local funds) into Kentucky cooperatives. Only the Kentucky West Nursery Cooperative was not incorporated by 2001 when the ADB funds were first approved for some of these cooperatives. The investments were made towards the following seven cooperatives: Central Kentucky Growers (CKG), Cumberland Farm Products (CFP), Green River Produce Marketing Cooperative (GRPMC), Kentucky West Nursery (KWN), Purchase Area Aquaculture Cooperative (PAAC), South East Kentucky Agricultural Cooperative (SEKAC) and West Kentucky Growers (WKG). Today, of these cooperatives, three are still operating as a cooperative (CKG, CFP, SEKAC), two are operating in some other form (KWN, PAAC) and two have ceased operations or have sold their facilities to a related business (GRPMC and WKG). Of the three still operating as a cooperative, only CKG is still operating as the members had originally planned. CFP no longer markets vegetables as they had the previous 35 years and has attempted to convert to a mini farm supply center and farmers market. SEKAC has leased their facilities to another business with an agreement that that business purchases Kentucky Proud products.

As most of the former cooperatives are either operating under a different form, with some in either very limited operations or have completely ceased operations, many have wondered if the ADBs investment into these cooperatives benefited Kentucky agriculture. However, while perhaps different decisions could have been made in the past that could have resulted in more of the cooperatives sustaining business operations, there have been successes that have resulted from the

existence of the cooperatives, regardless of their limited life-span. This section will look at what how those investments have impacted Kentuckys agricultural economy.

Review of ADB Investments in Cooperatives

The “Cooperative Movement arose primarily as a result of continued reductions of tobacco quota and persistent talk of a buyout. Farmers were unsure of what effects a tobacco buyout would have on their farming operations. Tobacco farmers across the state began looking for other on-farm possibilities. Interest grew for vegetable production (with existing success shown through one vegetable marketing cooperative in the state), aquaculture and nursery products, to name a few. Regardless of the enterprise, farmers were aware that in order to draw attention of desired markets, farmers would have to work together.

As the cooperatives began operations many new products began appearing on Kentucky farms. Catfish, tress, specialty peppers, broccoli, watermelons, cantaloupes are only a few examples. One by one and for a variety of reasons, the cooperatives began requesting funds from the ADB. The cooperatives felt encouraged to seek financial assistance from the ADB through the stated initial priorities of the ADB. According to the minutes from the first Kentucky Agricultural Development Board (ADB) meeting on July 19, 2000, the Governor stated “that the development of farmer owned and operated cooperatives were imperative in order to build a strong farm economy. Reasons for these requests included a variety of equipment to improve quality and processing ability and inability to pay operating costs. Then when some of the cooperatives continued to seek financial assistance from the ADB season after season and had not shown success, ADB members became concerned that the cooperatives may not be able to achieve profitability. They wondered if the cooperatives would be self-sustaining.

Table 1 summarizes the ADB funds that were distributed to the cooperatives as well as member involvement statistics. Data was not available for the SEKAC, KWN and PAAC, other than ADB funds invested and membership numbers. It should be noted that with the recent auction of KWN facilities and equipment, the KWN was able to repay their entire loans to the ADB. Data was also not available for GRPMC grower payments for 2000 and 2001. Given the remainder of the data ends at 2005, the \$120,000 ADB loan to Central Kentucky Growers was also excluded. For the produce cooperatives (with the exception of SEKAC), for every one dollar of ADB investment, there were \$4.06 of sales generated and \$2.58 of those sales that were returned to the grower.

After about four years of receiving funding requests from cooperatives, many ADB members became hesitant about continued funding of the cooperatives. It was around that same time, that another ADB funded cooperative, the Kentucky Produce and Aquaculture Alliance, with USDA and ADB grant funds initiated a state-wide vegetable marketing feasibility study. This feasibility study was conducted to look at the structure of the vegetable cooperatives in existence at the time and determine if there was a feasible method to re-align the businesses and create a sustainable vegetable marketing industry in Kentucky. Results of the study indicated that there was potential for a new business model for marketing of Kentucky vegetables. This model involved all of the vegetable cooperatives working together under one umbrella. Instead of separate yet similar businesses across the state duplicating services and cooperatives competing with each other for buyers, the vegetable cooperatives could consolidate and run a more effective and efficient

Table D.5: *ADB Investment in Cooperatives and Select Cooperative Sales and Grower Payment Data.*

All Cooperatives	
ABD Investments ^b	\$10,002,743
Membership	254
ADB Investment per Member	\$39,381
Produce Co-ops (except SEKAC) ABD Investments^c	
Membership	155
2000-2005 Sales	\$26,856,031
2000-2005 Grower Payments ^d	\$17,106,116
ADB Investment per Member	\$42,696
Co-op Sales per ADB Investment \$	\$4.06
Grower Payment per ADB Investment \$	\$2.58

^a Excludes CKG's 2006 \$120,000 loan.

^b \$1,840,784 loaned to KWN was paid back to the ADB.

^c Excludes CKG's 2006 \$120,000 loan.

^d Excludes GRMPC grower payments for 2000–2001.

marketing business. A business plan was development based on results from the feasibility study and input from the vegetable cooperatives. The business plan provided that the business would initially be funded through member investment and ADB funds. After this two-year long process of the feasibility study and business plan, along with simultaneous lack of business success of many of the produce cooperatives, this state-wide vegetable marketing initiative did not go past the business plan development phase. Some cooperative members were not willing to give up local control of their businesses. Further, the consolidated business would charge for their marketing services and members were concerned about paying an extra charge and the impact that would have on farm profitability. The project died and ending with it was possibly the last chance for a wide scale vegetable marketing program in Kentucky.

Opinions of current and former cooperative members and directors

As a part of the analysis of ADF investments, the ADB funded cooperatives were interviewed. The Review Team also interviewed a group of “experts that were not a part of the cooperatives but worked closely with them. Given the short life span of many of the cooperatives, the Review Team felt it important to include some of the comments made by these members and the expert panel. The general feeling among former cooperative members is that even though the cooperative is no longer in business, there are more vegetables grown in Kentucky today because of the cooperatives. The following comments were made that describe members and directors perceived benefits through ADF investments in their respective businesses:

- ADF financed cooling equipment which provided the following benefits:
 - Improved the quality of produce packed
 - Allowed farmers to increase their own volume of produce through ability to increase marketing area

- Increased transportation efficiency through ability to sell tractor trailer volumes
- Increased marketing area of produce and aquaculture products (e.g. expanded into 24 states and Puerto Rico for one cooperative and into 37 states for another)
- Assisted operating costs of the new cooperative thereby allowing for a “weeding out period for members. During this time, growers learned what worked and what didnt work. Many of the poorer growers left the cooperative. They are now operating with 10 farmers that are willing and able to produce quality produce to keep the cooperative in business.
- Expanded produce variety. Many customers are looking for the “one-stop shop. The ability to grow volumes of multiple types of produces made the cooperative more appealing to produce buyers.
- ADF assisted growers in getting through the 3-4 year start-up cycle for their business.
- The cooperative contributed to agricultural diversification, institutional development and facilitated new grower investments in non-traditional enterprises.
- In regarding to the Kentucky West Nursery, the cooperative lending power provided by the ADB was a significant boost to new growers. It allowed them to expand much faster than a self financed start-up business.
- There are now three to four times more fish farmers and three times more acres of catfish than before PAAC was started.
- Kentucky aquaculture had to try and fail at a catfish processing facility in order to move past the idea and towards the live markets that have a greater chance of success.

Perhaps one of the most important impacts of the ADF investments in cooperatives is the fact that the cooperatives established new markets for Kentucky farmers. Although many of the cooperatives are either operating as another form of business or have ceased operations, many of the growers have continued to raise the products to meet these markets that were established through the cooperatives existence. It has been estimated that among growers that were cooperative members for at least two years, 75% to 80% are still growing vegetables. If one of the purposes of the ADF is to increase diversity of Kentucky agriculture, then that purpose has been achieved through the funding of the cooperatives.

As would be expected, there were many complaints regarding how the ADB handled the cooperatives. Regarding the cooperatives that went out of business or significantly changed, it must first be acknowledged that each did so for different reasons. Each cooperative had their own strengths and their own weaknesses. There was no one factor that led to the cooperatives ceasing operations. The following comments were also made by the cooperative members interviewed:

- The ADB “Gave us just enough rope to hang ourselves.
- Forgiveable loan program did not work. This created a tax problem as when forgiveness was met, the loan was considered income. We do not think this was the intent of the program.

- Sometimes, the funds were too easy to get. If we had to go to a bank for the funds, then we would have been more likely to develop a more realistic business plan.
- Because the ADB wanted the co-op to expand into many counties, we were forced to work with inexperienced growers that should not have been growing vegetables. This dragged the entire co-op down as the poorer growers caused the better growers to lose money.
- The ADBs lack of knowledge of the vegetable market meant that they instilled unrealistic expectations. Some cooperative members reported that GOAP staff dictated what goals the cooperatives should include on ADB applications. These goals were often unrealistic for the businesses and were consequently not met.
- Non-funding of the state aquaculture pond cost share program directly impacted the cooperatives ability to provide enough catfish for continued operations. Cooperative members believed that these funds were originally promised to them, but those promises were not kept.
- Member production was expanded rapidly, but the ADB funds for the needed processing equipment were not received in a timely manner. This did not allow the co-op to process product and the product ended up being sent to a landfill and members suffered “considerable losses.
- The ADB did not have a long term commitment to the vegetable co-op effort.
- County ADB funds were turned into a forgivable loan when they were intended as grant funds.

It should be noted that these comments came from ADB funded businesses that for the most part are no longer in operation. Some of the comments are a sign of the cooperatives insufficient management. For example, a strong management team should be able to determine who would grow for their business and who should not. The cost of processing vegetables is directly related to the amount of poor quality produce moving through the facility. The higher the percentage of poor quality, the higher the processing costs. The management should be able to set quality standards at a certain level and only accept product at or above those levels.

One of the financial detriments of some of the cooperatives is that neither the ADB nor the cooperatives required member investment in the co-ops. The ABD was willing to invest funds when the members were not. When the co-ops had tough business decisions to make, decisions were made knowing that they would not be losing the members investments. In some situations, cooperative members believed that the Agricultural Development Fund was really their money anyway and that the ADB had a responsibility to subsidize their business.

Additionally, the ADB was hesitant to fund personnel. Personnel were perhaps the main deficiency of many of the cooperatives. Given the relatively small size of the businesses and their budgets, the cooperative managers were expected to be plant managers, salesmen, financial officers and administrators. While each cooperative had a manager that was qualified for one of these positions, none of them were qualified to successfully fulfill all of these roles. While the equipment purchased by the ADB was important for improved efficiencies of the businesses, without qualified personnel, even the most high-tech equipment cannot make sound management decisions.

Were the ADB Investments in Cooperatives a Benefit to Kentucky Agriculture?

The ADB invested in cooperatives as a way of supporting farmer-owned businesses. Unfortunately, many of these businesses are no longer in operation and many have asked “Why? As previously stated, there is no one reason why many of these businesses are no longer operating. Cumberland Farm Products had been a successful produce marketing cooperative for many years. They received ADF funds both for necessary updates to the facilities and for financial deficits to the bottom line. However, while there is still a functioning cooperative, they no longer market vegetables as they once did. The former produce buyer customers of the cooperatives began going directly to the co-op members and by-passing the cooperative. The business no longer had a reliable source of quality produce and a dependable customer base. Does this mean the cooperative failed, or did the business run its cycle?

Some were influenced by early ADB comments regarding the importance of cooperatives to the farm economy and thought that their best chance of receiving funds from the ADB were to form cooperatives. Some members believed that the ADB funds were their money anyway, so the ADB would continue to fund a business even if it did not show a profit. If business management fell into either of these categories, then the business was not started for the right reasons.

There were also management deficiencies at the cooperatives. Cooperative management includes both hired staff and the boards of directors. By Kentucky statute, at least 80% of the Board members had to be growers for the cooperatives. Some of the member-growers had difficult time making decisions that would simultaneously be the best decision for the co-op yet is a bad decision for their individual farm. Some managements had tendencies to blame problems on factors they could not control (weather, market prices) as compared to things they could control (labor, product flow-through, cost of production). There was some lack of management discipline where the Boards would set policies and hold neither themselves nor other members accountable to those policies. Again, with mind sets such as these, a business, regardless of the type of organization, be it corporation or cooperative, would not succeed.

Many of the co-op members were new to growing vegetables and many were also tobacco growers. While quality is a very important consideration for tobacco, it has a much greater impact on selling ability to a perishable crop such as vegetables. Some growers were not properly educated on the requirements for successful vegetable production. In the pre-tobacco contract days, poorer quality of tobacco would still sell; poorer quality of vegetables will not sale. Additionally, tobacco was still the primary enterprise on the farm. If a grower had to choose where labor would spend their time, they would often choose to work in tobacco. Again, decisions such as these are detrimental to perishable commodities.

As described in an earlier example, some cooperative managers stated that “inexperienced growers were a “drag on the co-op and this caused the “good growers to lose money. In the free market, those producers that are not as efficient will not make a profit and will therefore go out of business. They will work themselves out of the market and not be a hindrance to the more efficient and profitable growers. This process however, takes time and the cooperatives from start-up to shut down operated for a very short time period considering the learn curve for all involved.

There were comments made that many of their members will not grow vegetables again because of the failure of the cooperative. However, for most other cooperatives, many of their

growers have continued to grow. *This is supported by the continued increase in vegetable production as outlined in the horticulture section of this report.* Furthermore, of the one vegetable marketing cooperative still in operation, they stated that the reason they have been able to sustain operation is that their initial core of growers made the decision that they want to continue marketing produce together. They therefore required each member to make personal financial investments into the cooperative. The better growers remained in the cooperative and the poorer growers left. They are now confident that they can sustain business operations.

Conclusions

The purpose of the section was to try to examine the issue of the how beneficial the ADBs investments into cooperatives were to the Kentucky agricultural economy. As with most situations, hind sight is 20/20. One way to examine how we really feel about the situation is if we knew then what we know now, would we decide that the ADB should just not have funded the cooperatives or would we decide that they should have funded them, yet do some things differently.

Some would argue that because many of the cooperatives are no longer in business, that the ADBs investments in them were wasted. There are however continuing impacts despite their short life span. The cooperatives opened markets that farmers are still fulfilling. They created secondary businesses. They allowed some growers time to determine what Kentucky farmers can do well and what they cannot do as well.

There is no one reason most of these businesses have ceased operations. Some chose to be too dependent on government assistance. For CFP who had been in existence for more than 30 years, perhaps they just ran their course. However, one conclusion that can be drawn is that there are more vegetable producers in Kentucky now than before the cooperatives existed. Although some of the former co-op members removed themselves from the industry, the produce industry in Kentucky continues to grow and thrive.